GoldStar

VIDEO CASSETTE RECORDER

SERVICE MANUAL

MODEL : P934P

CAUTION

BEFORE SERVICING THE UNIT, READ THE "SAFETY PRECAUTIONS" IN THIS MANUAL.

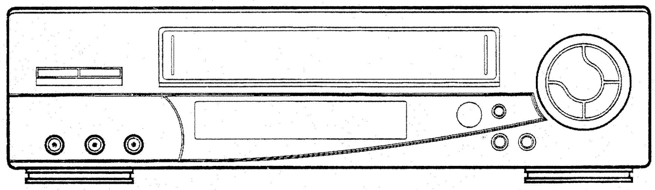


TABLE OF CONTENTS

SECTION 1
SUMMARY

KEY TO ABBREVIATIONS **1-1**

IMPORTANT SAFETY PRECAUTIONS **1-2**

- Precautions during Servicing

SAFETY CHECK AFTER SERVICING **1-3**

- Insulation resistance test
- Dielectric strength test
- Clearance distance
- Leakage current test

FEATURES **1-4**

SPECIFICATIONS **1-4**

LOCATION OF CUSTOMER CONTROLS **1-5**

SECTION 2
CABINET & MAIN FRAME

SERVICE METHOD **2-1**

1. Electrical Service Fixture List 2-1
2. SVC FIXTURE Connecting Method 2-2

CABINET DISASSEMBLY **2-4**

1. Top Case 2-4
2. Bottom Cover 2-4
3. Front Panel 2-4

CIRCUIT BOARD DISASSEMBLY **2-5**

1. Housing and Deck Ass'y 2-5
2. Power Ass'y 2-5
3. Timer Circuit Board 2-5
4. Main Circuit Board 2-5

EXPLODED VIEWS **2-7**

1. Cabinet & Main Frame Section 2-7
2. Packing & Accessory Section 2-9
3. Remote Control Section 2-10

SECTION 3
ELECTRICAL

ELECTRICAL ADJUSTMENT PROCEDURES **3-1**

1. Servo Circuit 3-1
2. Audio Circuit 3-1
3. Tuner/IF Circuit 3-2

BLOCK & CIRCUIT DIAGRAMS **3-3**

1. Connection Circuit Diagram 3-3
2. Power (SMPS) Circuit Diagram 3-5
   - Power (SMPS) Block Diagram 3-7
3. Audio Block Diagram 3-8
   - Audio Circuit Diagram 3-9
4. Timer/Key Board Block Diagram 3-11
   - Timer/Key Board Circuit Diagram 3-13
5. Tuner/IF Block Diagram 3-15
   - Tuner/IF Circuit Diagram 3-17
6. Premiere Block Diagram 3-19
   - Premiere Circuit Diagram 3-21
7. Syscon/Servo Block Diagram 3-23
   - Syscon/Servo Circuit Diagram 3-25
8. Y/C Circuit Diagram 3-28
   - Y/C Block Diagram 3-31
9. Pre-Amp Circuit Diagram 3-33
   - Pre-Amp Block Diagram 3-35

PRINTED CIRCUIT BOARD DIAGRAMS **3-39**

1. Main P.C.Board 3-39
2. Power (SMPS) P.C.Board 3-41
3. Pre-Amp P.C.Board 3-42
4. Timer/Key P.C.Board 3-41
5. IF P.C.Board 3-43
6. Premiere P.C.Board 3-43

SECTION 4
MECHANISM

NOTE) The table of contents for this section is edited separately.

SECTION 5
REPLACEMENT PARTS LIST

- Mechanical Section 5-1
- Cabinet & Main Frame Section 5-3
- Packing Accessory Section 5-4
- Remote Control Section 5-4
- Fixture Section 5-5
- Electrical Section 5-6

SECTION 1 SUMMARY KEY TO ABBREVIATION

A	AC	:Alternating Current
	ACC	:Automatic Color Control
	ACSS	:Automatic Channel Setting System
	ADJ	:Adjust
	A/E	:Audio Erase
	AFC	:Automatic Frequency Control
	AFT	:Automatic Fine Tuning
	AGC	:Automatic Gain Control
	A.H.SW	:Audio Head Switch
	ALC	:Automatic Level Control
	AM	:Amplitude Modulation
	AMP	:Amplifier
	ANT	:Antenna
	APC	:Automatic Phase Control
	ASS'Y	:Assembly
	AUX	:Auxiliary
B	B	:Base
	BGP	:Burst Gate Pulse
	BPF	:Bandpass Filter
	BS	:Brodcasting Satellite
	BW or B/W	:Black and White
C	C	:Capacitor, Chroma, Collector
	CAN	:Cancel
	CAP	:Capstan
	CAP.BRK	:Capstan Brake
	CAP.RVS	:Capstan Reverse
	CATV	:Cable Television
	CBA	:Circuit Board Assembly
	CCD	:Charge Coupled Device
	C.CTL	:Chro Control, Capstan Control
	CFG	:Capstan Frequency Generator
	CHROMA	:Chrominance
	CNR	:Chroma Noise Reduction
	COMB	:Combination Comb Filter
	COMP	:Comparator Composite Compensation
	CONV	:Converter
	C.ROT SW	:Color Rotary Switch
	CS	:Chip Select
	C.SYNC	:Composite Synchronization
	CTL DIV	:Control Divide
	CUR	:Current
	CYL	:Cylinder
D	D	:Drum, Digital, Diode, Drain
	D.ADJ	:Drum Adjust
	DC	:Direct Current
	D.CTL	:Drum Control
	DEMOD	:Demodulator
	DET	:Detect
	DEV	:Deviation
	DHP	:Double High Pass
	DIGITRON	:Digital Display Tube
	DL	:Delay Line
	DOC	:Drop Out Compensator
	DUB	:Dubbing
	D.V SYNC	:Dummy Vertical Synchronization
E	E	:Emitter
	EE	:Electric to Electric
	EMPH	:Emphasis
	ENA	:Enable
	ENV	:Envelope
	EP	:Extended Play
	EQ	:Equalizer
	EXP	:Expander
F	F	:Fuse
	FB	:Feed Back
	FBC	:Feed Back Clamp
	FE	:Full Erase
	FG	:Frequency Generator
	FL	:Filter
	FM	:Frequency Modulation
	F/R	:Forward/Reverse
	FS	:Frequency Synthesizer
	FSC	:Subcarrier Frequency
	F/V	:Frequency Voltage
G	GEN	:Generator
H	H	:High, Horizontal
I	IC	:Intergrated Circuit
	IF	:Intermediate Frequency
	INS	:Insert
L	L	:Low, Left, Coil
	LD	:Loading
	LD VTG CTL	:Loading Voltage Control
	LECHA	:Letter Character
	L.M	:Level Meter
	LP	:Long Play
	LPF	:Low Pass Filter
M	MAX	:Maximum
	MD	:Modulator
	MECHA.CTL	:Mechanism Control
	MIC	:Microphone
	MIN	:Minimum
	MIX	:Mixer, Mixing
	M.M.	:Mono Multi Vibrator
	MMV	:Monostable Multivibrator
	MOD	:Modulation, Modulator
	MODEN	:Modulation-Demodulator
	MPX	:Multiplex
N	NR	:Noise Reduction
O	OSC	:Oscillator
	OSD	:On Screen Display
P	PB	:Playback
	PCB	:Printed Circuit Board
	P.CTL	:Power Control
	PER-AMP	:Preamplifier
	P.F	:Power Failure
	PG	:Pulse Generator
	PLL	:Phase Locked Loop
	PREM.DET	:Premire Detect
	P-P	:Peak to Peak
	PS	:Phase Shift
	PWM	:Pulse Width Modulation
	PWR CTL	:Power Control
Q	Q	:Transistor
	QH	:Quasi Horizontal
	QSR	:Quick Set Record
	QTR	:Quick Timer Record
	QV	:Quasi Vertical
R	R	:Resistor, Right
	RE(or RC)	:Remocon, Receiver
	REC	:Recording
	REC S.'H'	:Record Start 'Hight'
	REF	:Reference
	REG	:Regulated, Regulator
	REMOCON	:Remote Control(unit)
	RF	:Radio Frequency
	R/P	:Record/Playback
	RTC	:Reel Time Counter
S	S	:Serial
	S.ACCEL	:Slow Accel
	SAOP	:Second Audio Program
	SC	:Scart, Simulcast
	S.DET	:Secam Detect
	SH	:Shift
	SHARP	:Sharpness
	SIF	:Sound Intermediate Frequency
	SLD	:Side Locking
	S/N	:Signal to Noise Ratio
	SP	:Standard Play
	ST	:Stereo
	SUB	:Subtract, Subcarrier
	SW or S/W	:Switch
	SYNC	:Synchronization
	SYSCON	:System Control
T	T	:Coil
	TP	:Test Point
	TR	:Transistor
	TRK	:Tracking
	TRANS	:Transformer
	TU	:Tuner, Take-Up
U	UHF	:Ultra Hight Frequency
	UNREG	:Unregulated
V	V	:Volte, Vertical, Video
	VA	:Voltage Alive
	VCO	:Voltage Controlled Oscillator
	VGC	:Voltage Gain Control
	VHF	:Very High Frequency
	V.H.SW	:Video Head Switch
	VISS	:VHS Index Search System
	VPS	:Video Program System
	VR	:Variable Resistor or Volume
	V-SYNC	:Vertical Synchronization
	VTG	:Voltage
	VV	:Video to Video
	VXO	:Voltage X-tal Oscillator
W	W	:Watt
	WHT	:White
	W/O	:With Out
X	X-TAL	:Crystal
Y	Y/C	:Luminance/Chrominance
	YNR	:Luminance Noise Reduction
Z	ZD	:Zener Diode

IMPORTANT SAFETY PRECAUTIONS

Prior to shipment from the factory, the products are strictly inspected to conform with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

• Precautions during Servicing

1. Locations requiring special caution are denoted by labels and inscriptions on the cabinet, chassis and certain parts of the product. When performing service, be sure to read and comply with these and other cautionary notices appearing in the operation and service manuals.

2. Parts identified by the ⚠ symbol and shaded (▨) parts are critical for safety.
   Replace only with specified part numbers.
   Note: Parts in this category also include those specified to comply with X-ray emission standards for products using cathode ray tubes and those specified for compliance with various regulations regarding spurious radiation emission.

3. Use Specified internal wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads

4. Use specified insulating materials for hazardous live parts. Note especially:
   1) Insulation Tape
   2) PVC tubing
   3) Spacers
   4) Insulation sheets for transistor

5. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.) wrap ends of wires securely about the terminals before soldering.(Fig. 1)

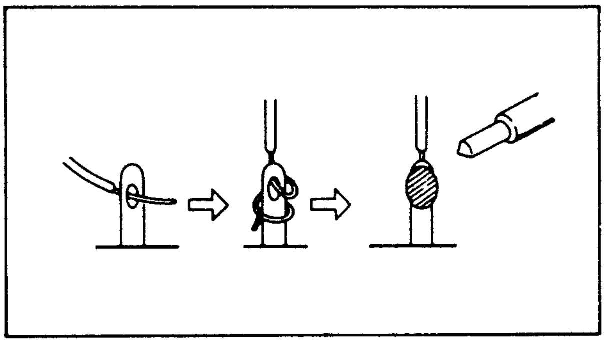


Fig. 1

6. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.)

7. Check that replaced wires do not contact sharp edged or pointed parts.

8. When a power cord has been replaced, check that 10-15Kg of force in any direction will not loosen it.(Fig. 2)

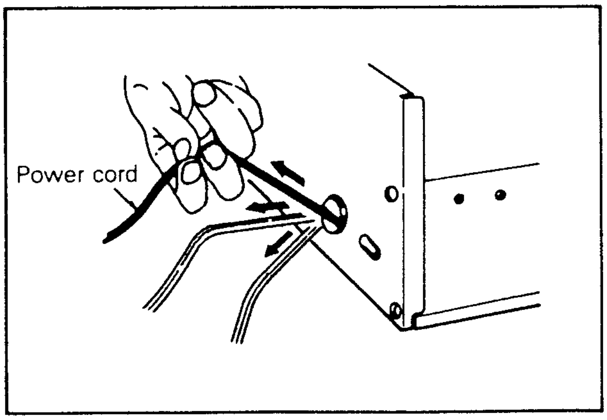


Fig. 2

9. Also check areas surrounding repaired locations.

10. Products using cathode ray tubes (CRTs)
    In regard to such products, the cathode ray tubes themselves, the high voltage circuits, and related circuits are specified for compliance with recognized codes pertaining to X-ray emission. Consequently, when servicing these products, replace the cathode ray tubes and other parts with only the parts specified. Under no circumstances attempt to modify these circuits. Unauthorized modification can increase the high voltage value and cause X-ray emission from the cathode ray tube.

SAFETY CHECK AFTER SERVICING

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts and wires have been returned to original positions. Afterwards, perform the following tests and confirm the specified values in order to verify compliance with safety standards.

• Insulation resistance test

Confirm the specified insulation resistance or greater between power cord plug prongs and externally exposed parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table below.

• Dielectric strength test

Confirm specified dielectric strength or greater between power cord plug prongs and exposed accessible parts of the set(RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table below.

• Clearance distance

When replacing primary circuit components, confirm specified clearance distance (d), (d') between soldered terminals, and between terminals and surrounding metallic parts. See table below.

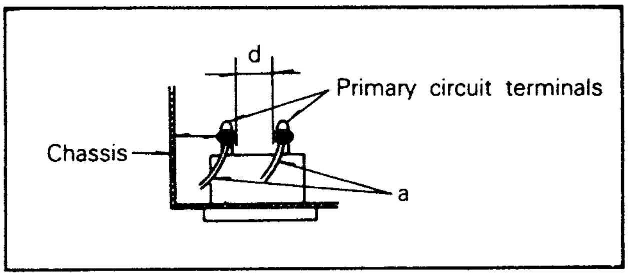


Fig. 3

Table 1:Ratings for selected areas

AC Line Voltage	Region	Insulation Resistance	Dielectric Strength	Clearance Distance(d),(d)
*110 to 130 V 200 to 240 V	Europe Australia	≧10 MΩ/500 V DC	4kV 1 minute	≧6mm(d) ≧8mm(d) (a Power cord)

*Class II model only.

Note. This table is unofficial and for reference only. Be sure to confirm the precise values for your particular country and locality.

• Leakage Current test

Confirm specified or lower leakage current between B(earth ground, power cord plug prongs) and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.)

Measuring Method: (Power ON)
Insert load Z between B(earth ground, power cord plug prongs) and exposed accessible parts. Use an AC voltmeter to measure across both terminals of load Z. See figure and following table.

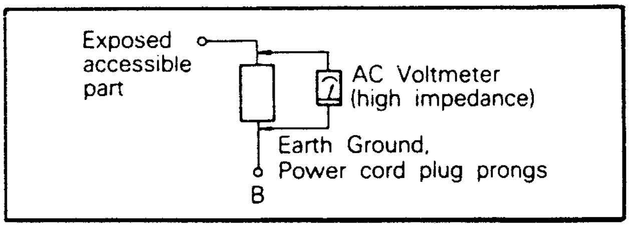

Exposed accessible part
AC Voltmeter (high impedance)
Earth Ground, Power cord plug prongs
B

Fig. 4

Table 2:Leakage current ratings for selected areas

AC Line Voltage	Region	Load Z	Leakage Current(i)	Earth Ground (B) to:
100 to 130 V	Europe	2kΩ	i≦0.7m A peak i≦2m A dc	Antenna earth terminals
200 to 240 V	Australia	50kΩ	i≦0.7m A peak i≦2m A dc	Other terminals

Note. This table is unofficial and for reference only. Be sure to confirm the precise values for your particular country and locality.

FEATURES

- HQ (High Quality) picture enhancement system that improves picture sharpness and detail
- Centre tape mechanism for high quality pictures
- Full function infra-red remote control handset
- Programmable 80 channel memory with Frequency synthesised tuner
- ACMS (Automatic Channel Memory System) plus - the channels will be preset, sorted and memorized automatically.
- ACSS (Automatic Clock Setting System) - the clock will be set automatically by reading the present time and date from the teletext of the German time TV stations ARD or ZDF. : ★
- 6 event/1 month programmable timer
- Built-in Showview programming. : ★
- VPS - Video Programme System. : ★
- PDC - Programme Delivery. : ★
- Self diagnosis function
- Recording and playback for 16:9 Wide-screen format
- Auto Power on and Play
- LP - Long Play - recording and playback
- Shuttle Controls
- Logic & Jet Search
- VISS - VHS Index Search System
- Child Lock
- Auto Head Cleaner
- Fine still, Frame advance & Variable Slow functions
- Real Time Counter
- Quick Start function
- Digital Auto Tracking System
- Digital NICAM Stereo decoder for reception of Stereo, Bilingual & Mono sound
- PREMIERE Compatible. : ★
- Hi-Fi Audio System & Level Meter
- Simulcast Recording

★ : Optional Function

SPECIFICATIONS

GENERAL

Power : 100-240V~, 50Hz
Power consumption : Approx. 20 watts
Video recording system : Double azimuth 4 heads, helical scanning system
Tape speed : 23.39 mm/sec (SP mode)/11.69 mm/sec (LPmode)
Tape format : Tape width 1/2" (12.7 mm high density VHS tape)
Maximum recording time : 4 hours in SP mode/8 hours in LP mode (with E-240 tape)
Rewind time : Approx. 150 sec. (with E-180 tape)
Dimensions (W × H × D) : 14.2" × 3.6" × 11.8" (360 × 92 × 300 mm)
Weight : 9.7lbs. (4.4 kg)
Operating temperature : 41°F-95°F (5°C-35°C)
Operating humidity : Less than 80 %
Timer : 24 hours display type

VIDEO

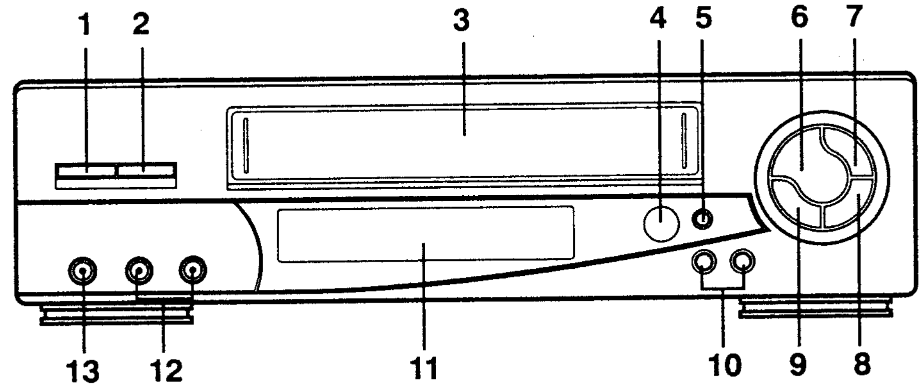
Television system : CCIR standard (625 lines, 50 fields)
PAL colour signal
Recording format : PAL/MESECAM
RF reception : PAL/SECAM (B/G)
RF OUT : PAL G/SECAM G
Input level : VIDEO IN (Scart, phono type)
1.0 Vp-p, 75 ohm, unbalanced
Output level : VIDEO OUT (Scart phono type)
1.0 Vp-p, 75 ohm, unbalanced
Signal to noise ratio : More than 43 dB
RF modulator : UHF channels 32-40 (adjustable)

AUDIO

Input level : AUDIO IN (Scart, phono type)
0 dBm, more than 10 Kohm
Output level : AUDIO OUT (Scart, phono type)
Scart type: 0 dBm, less than 1 Kohm
RCA type: -4 dBm, less than 2 Kohm
Audio track : Mono track & Hi-Fi track
Audio frequency response : Normal:100 Hz-10 kHz (-6/+3)
Hi-Fi: 20 Hz-20 kHz (-3/+3)
Audio signal to noise ratio : Hi-Fi audio: More than 68 dB (JIS A filter)
Audio dynamic range : Hi-Fi audio: More than 80 dB (JIS A filter)

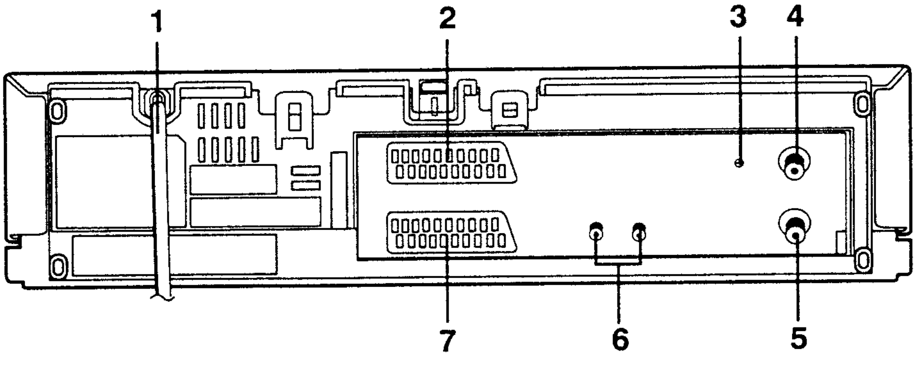
LOCATION OF CUSTOMER CONTROLS

FRONT



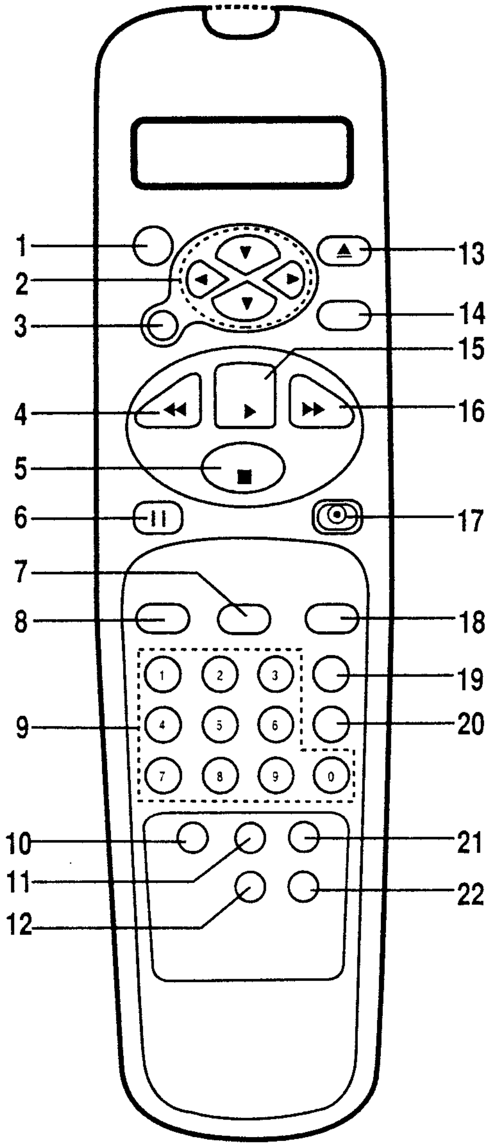
1. OPERATE
2. STOP/EJECT
3. VIDEO CASSETTE COMPARTMENT
4. REMOTE CONTROL SENSOR
5. REC/QSR
6. PLAY
7. P/STILL
8. FAST FORWARD/CUE
9. REWIND/REVIEW
10. CHANNEL PROGRAMME SELECTORS (+/-)
11. MULTI FUNCTION DISPLAY
12. AUDIO INPUT TERMINALS
13. VIDEO INPUT TERMINAL

REAR



1. MAINS LEAD
2. EURO AV2/DECODER
3. VIDEO CHANNEL CONTROL
4. RF. OUT
5. AERIAL INPUT
6. AUDIO OUT TERMINALS (L/R)
7. EURO AV1

REMOTE CONTROL


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
1
2
3
4
5
6
7
8
9
0

1. OPERATE
2. CURSORS (∧ ∨ 〈 〉)
3. OK
4. REWIND
5. STOP
6. P/STILL
7. CHILD LOCK
8. VISS
9. NUMBER BUTTONS:
10. TV/VCR : ★
11. TAPE SPEED SELECT (LP)
12. SHOWVIEW
13. EJECT
14. i
15. PLAY
16. FF
17. REC/QSR
18. AUDIO/VIDEO MODE
19. CLOCK/TAPE COUNTER
20. CLEAR
21. PDC/VPS : ★
22. AUTOMATIC TRACKING

★ : Optional Function

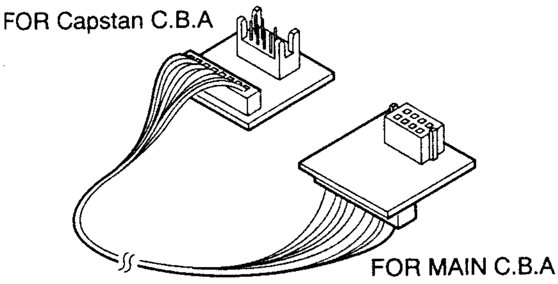
SECTION 2 CABINET & MAIN FRAME

SERVICE METHOD

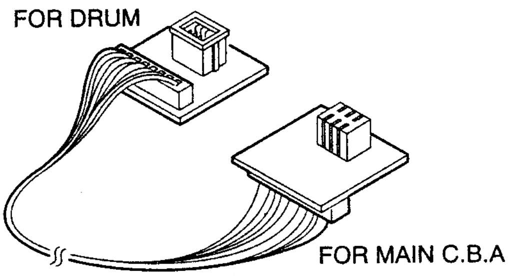
1. Electrical Service Fixture List

The Fixture uses in Deck Ass'y Checking.

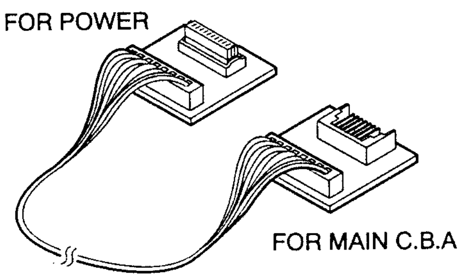
1) Fixture Cable ① (Fix.1)
Parts No: 6871R-0288A (Optional Parts)


FOR Capstan C.B.A
FOR MAIN C.B.A

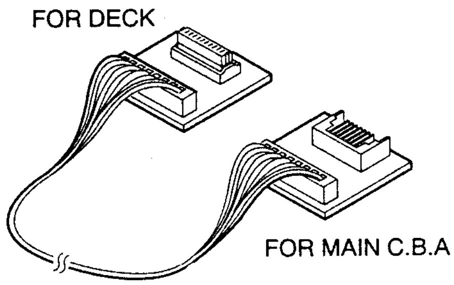
2) Fixture Cable ② (Fix.2)
Parts No: 6871R-0288B (Optional Parts)


FOR DRUM
FOR MAIN C.B.A

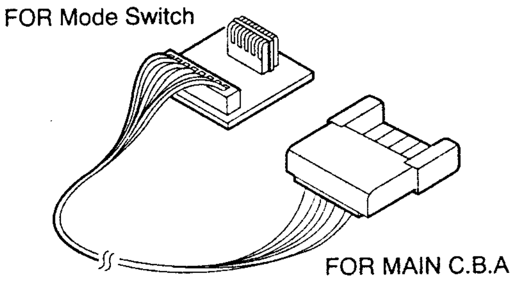
3) Fixture Cable ③ (Fix.3)
Parts No: 6871R-0288C (Optional Parts)


FOR POWER
FOR MAIN C.B.A

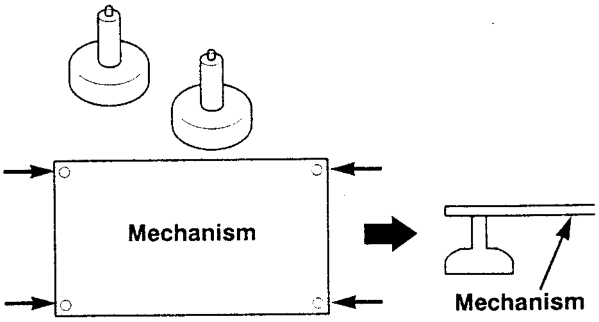
4) Fixture Cable ④ (Fix.4)
Parts No: 6871R-0288D (Optional Parts)


FOR DECK
FOR MAIN C.B.A

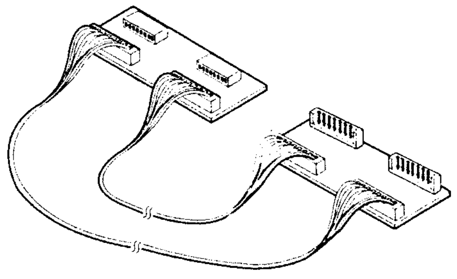
5) Fixture Cable ⑤ (Fix.5)
Parts No: 6871R-0288E (Optional Parts)


FOR Mode Switch
FOR MAIN C.B.A

6) Fixture Cable ⑥ (Fix.6)
Parts No: 322-065A (Optional Parts)


Mechanism
Mechanism

7) Fixture Cable ⑦ (Fix.7)
Parts No: 6871R-0288J (Optional Parts)



2. SERVICE FIXTURE CONNECTING METHOD

1) Check And Replace of The Electrical Parts

▶ Disassembly Flow

① Top Case ▷ ② Front Panel ▷ ③ Timer C.B.A ▷ ④ Housing & Deck Ass'y ▷ ⑤ Power Ass'y ▷ ⑥ Main C.B.A ▷

a. Refer to pages 2-4, 2-5 for Disassembling.
b. Assemble inversely like figure 2-2 and check the electrical Parts.

★ Notes in Check
ⓐ Insert Video Cassette Tape inversely.
ⓑ In disassembling and assembling, be careful not to be damaged CST Switch.

▶Position Upside Down

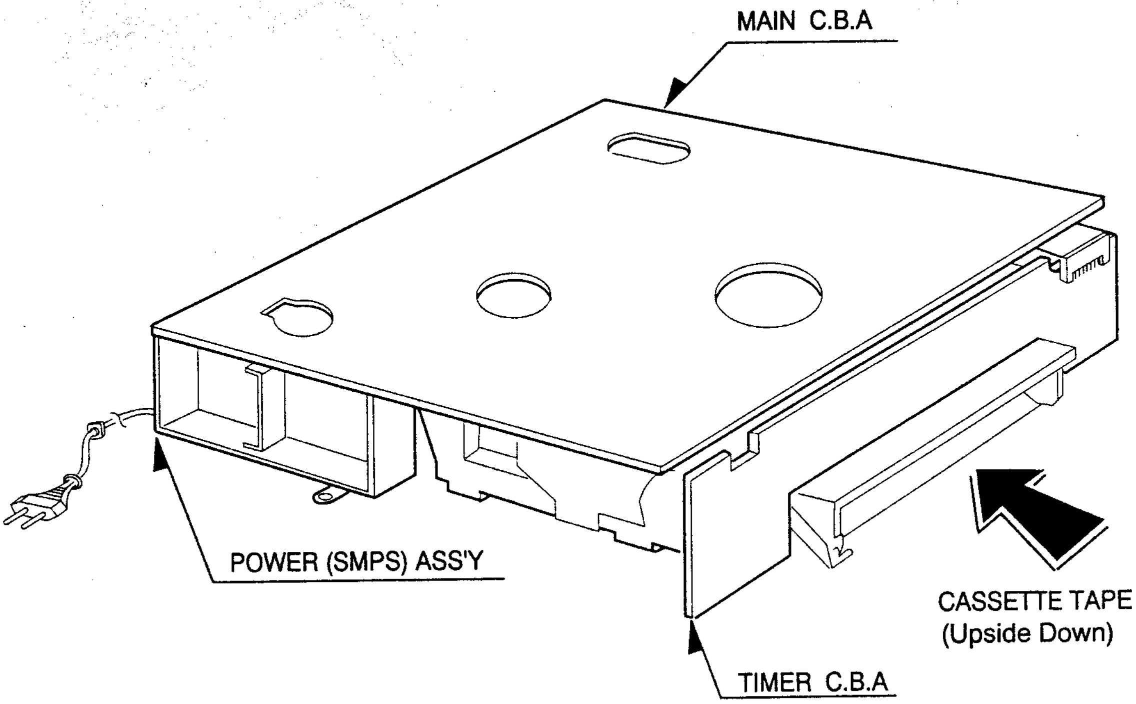

MAIN C.B.A
POWER (SMPS) ASS'Y
CASSETTE TAPE
(Upside Down)
TIMER C.B.A

Fig. 2-2

P9

SERVICE METHOD

2) Check And Replace of The Deck Ass'y

▶ Disassembly Flow

① Top Case ▷ ② Front Panel ▷ ③ Timer C.B.A ▷ ④ Housing & Deck Ass'y ▷ ⑤ Power Ass'y ▷ ⑥ Main C.B.A ▷

a. Refer to pages 2-4, 2-5 for Disassembling.
b. Assemble like figure 2-3 and connect with fixture 7EA.

★ Notes in Check

ⓐ Short LED501 of Main C.B.A so that the End sensor (Supply sensor, Take up sensor) and supply Reel Sensor, Take up Reel Sensor are not operating.
ⓑ Insert Video Cassette Tape while pushing CST switch.
ⓒ After Eject the cassette, you must push CST switch immediately.
ⓓ In disassembling and assembling, be careful not to be damaged CST Switch.
ⓔ In reassembling, you must open LED501.
ⓕ When Fix.②, Fix.③, Fix.④ will be connect, connect the identification line with accord as like the Fig. 2-3.

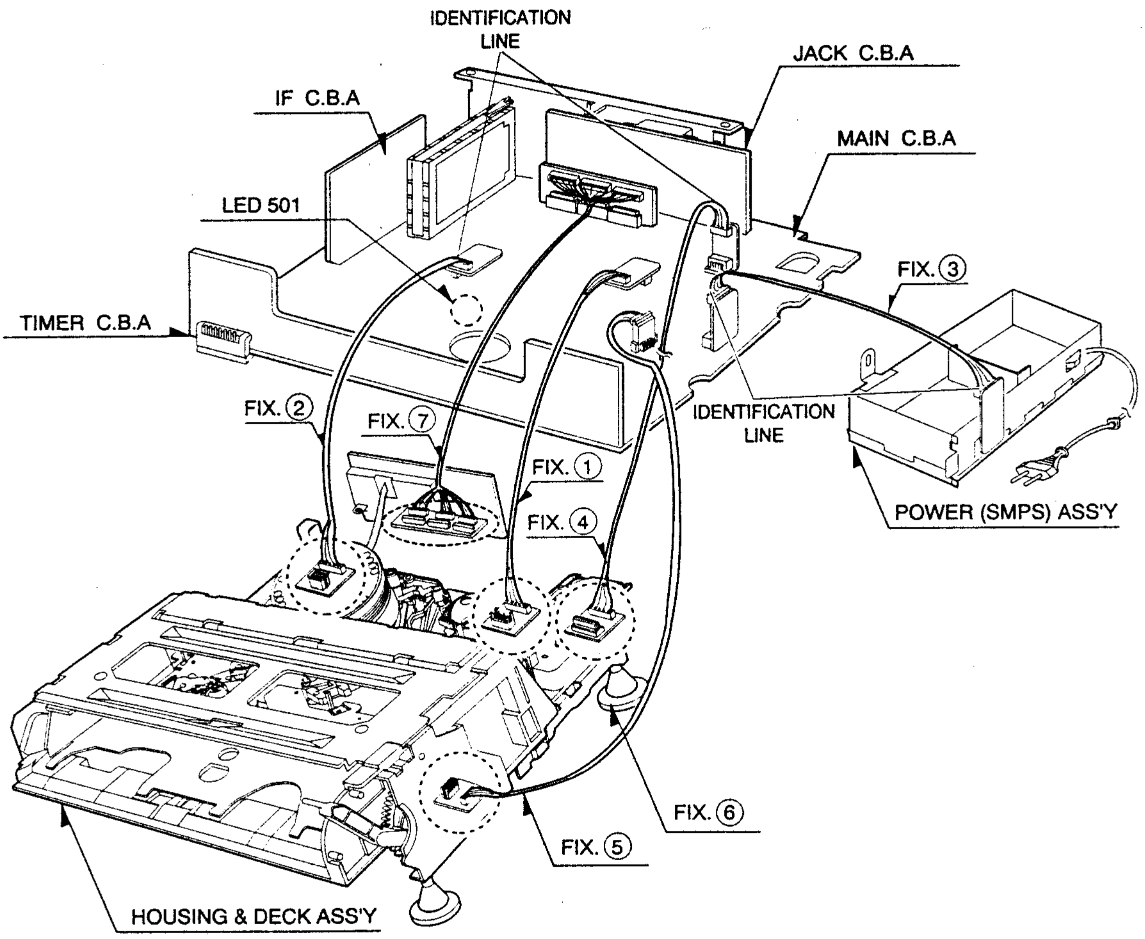

IDENTIFICATION LINE
JACK C.B.A
IF C.B.A
MAIN C.B.A
LED 501
FIX.③
TIMER C.B.A
FIX.②
FIX.⑦
IDENTIFICATION LINE
FIX.①
FIX.④
POWER (SMPS) ASS'Y
FIX.⑥
FIX.⑤
HOUSING & DECK ASS'Y

Fig. 2-3

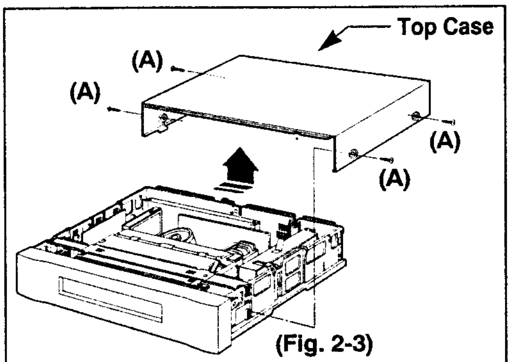
P9

CABINET DISASSEMBLY

▶ Disassembly Flow

① Top Case ▷ ② Front Panel ▷ ③ Housing Ass'y ▷ ④ Deck Ass'y ▷ ⑤ Power Ass'y ▷ ⑥ Timer C.B.A ▷ ⑦ Main C.B.A ▷

1. Top Case


Top Case
(A)
(A)
(A)
(A)

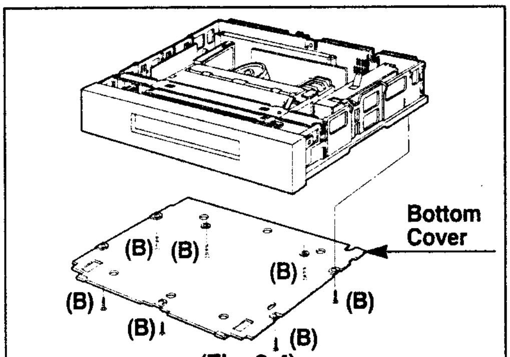
(Fig. 2-3)

1. Top Case (Fig. 2-3)

1-1) Release 4 screws (A).

1-2) Lift the Top Case by holding the back and remove it in the direction of the arrow.

2. Bottom Cover

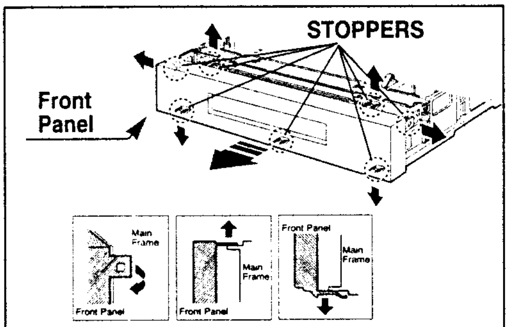

Bottom Cover
(B)
(B)
(B)
(B)
(B)
(B)
(B)

(Fig. 2-4)

2. Bottom Cover (Fig. 2-4)

2-1) Remove 7 screws (B) and Bottom Cover.

3. Front Panel


STOPPERS
Front Panel
Main Frame
C
Front Panel
Main Frame
Front Panel
Front Panel
Main Frame

(Fig. 2-5)

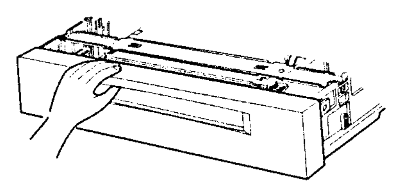
3. Front Panel (Fig. 2-5)

3-1) Remove the Top Case.

3-2) Remove the Bottom Cover.

3-3) Release the 7 stoppers of the Top, Bottom and side of the front panel (C) in the direction of the arrows.

★ Caution



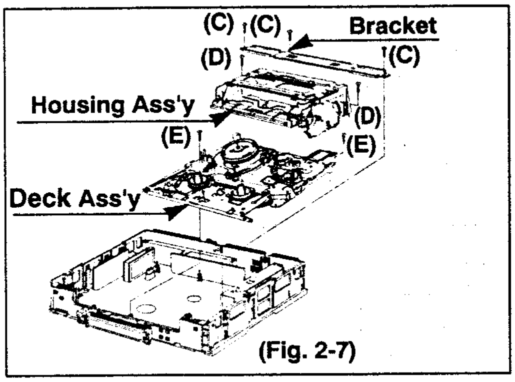
(Fig. 2-6)

★ Caution (Fig. 2-6)

When reassemble the front panel, assemble it in condition of inserting the Door Cassette inside, as shown in Fig. 2-6.

CIRCUIT BOARD DISASSEMBLY

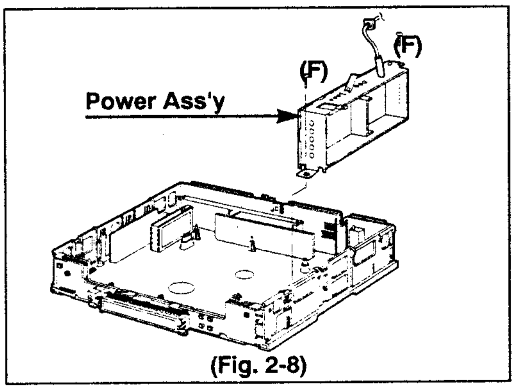
1. Housing and Deck Ass'y



(Fig. 2-7)

1. **Housing and Deck Ass'y (Fig. 2-7)**
   1-1) Remove the Front Panel.
   1-2) Remove 3 screws (C) of the Bracket.
   1-3) Remove 2 screws (D) and disassemble the housing.
   1-4) Remove 3 screws (E) and disassemble the deck.

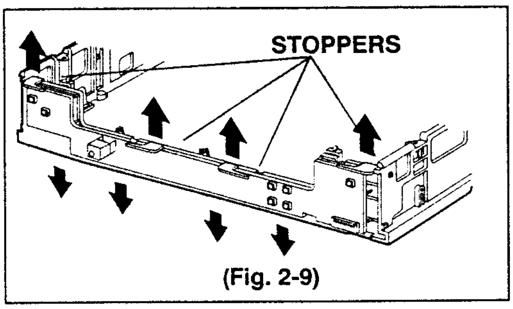
2. Power Ass'y



(Fig. 2-8)

2. **Power Ass'y (Fig. 2-8)**
   2-1) Remove 2 screws (F).
   2-2) Lift up the power Ass'y in the direction of the arrow.

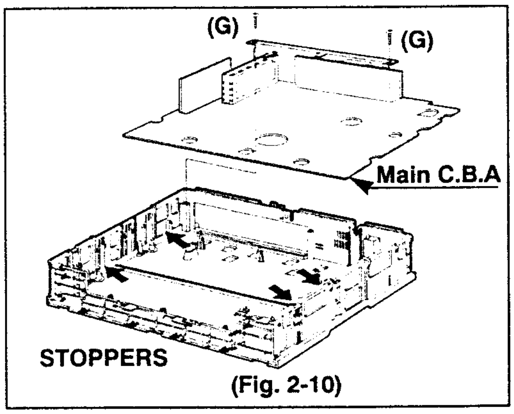
3. Timer Circuit Board



(Fig. 2-9)

3. **Timer Circuit Board (Fig. 2-9)**
   3-1) Pull the timer circuit board toward you while pressing 8 stoppers in the direction of the arrows to disengage, and remove the timer circuit board.
   3-2) Remove the connector for complete removal.

4. Main Circuit Board



(Fig. 2-10)

4. **Main Circuit Board (Fig. 2-10)**
   4-1) Remove 1 holder C.B.A.
   4-2) Remove 2 screws (G).
   4-3) Pressing 4 stoppers in the direction of the small arrows and lift up the main circuit board.

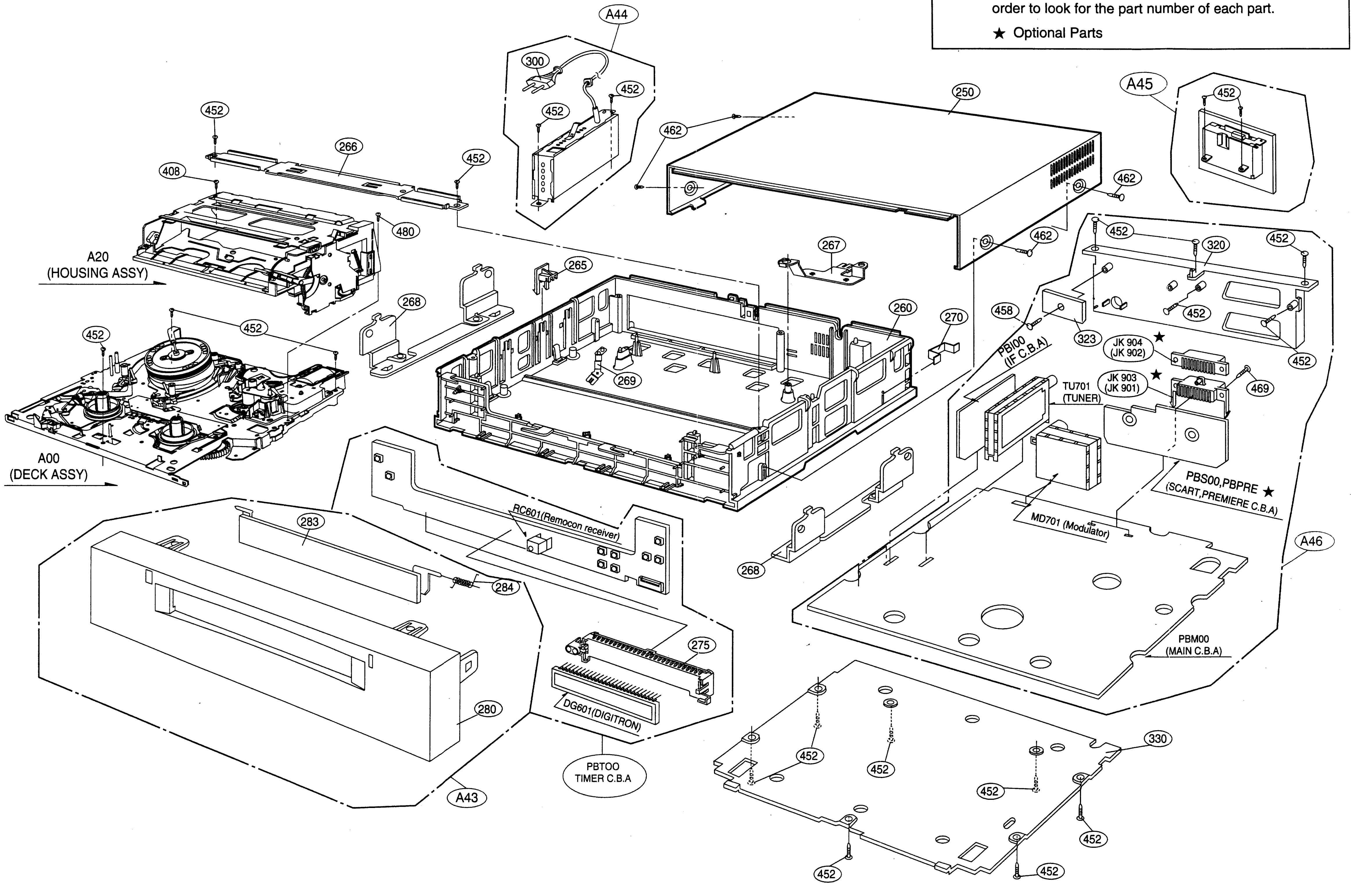
· Cabinet & Main Frame Section

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
ASSEMBLY PARTS SECTION						
		A43	3721R-F020S	PANEL ASSY	FRONT (P934P 3GO1,3)	
		A44	3501RK0608A	BOARD ASSY	SMPS	
		A45	3501RK0511A	BOARD ASSY	PRE-AMP	
		A46	3501R-0508L	BOARD ASSY	MAIN	
PARTS SECTION						
		250	217-570C	CASE	TOP (C-435A)	
		260	315-347B	FRAME	MAIN(60HR)	NSP
		265	324-995A	HOLDER	PWB	NSP
		266	321-738A	BRACKET	ASSY HOUSING(GHV-960'S)	
		267	255-429A	PLATE	GND(M/F)	
		268	255-359A	PLATE	SIDE GND(R-P40P'S)	
		269	255-362A	PLATE	PRE-AMP GND (R-P40P'S)	
		270	321-743A	BRACKET	PROTECT	
		280	3720R-F019F	PANEL	FRONT(P934P 3GO1,3)	NSP
		283	3580R-0011B	DOOR	CST(P934P 3GO1,3)	
		284	442-681A	SPRING	DOOR	
		300	681-051A	CORD	KKP-419J B-172 KLCE-2F PAL	
		320	258-778E	PANEL	ASSY DISTRIBUTOR	
		323	255-361A	PLATE	MODUL GND	
		330	220-050A	COVER	BOTTOM	
SCREW						
		451	353-046C	SCREW	(3X10 FZMY)	
		452	353-051A	SCREW	SPECIAL(3X10 FZMY)	
		459	353-046A	SCREW	SPECIAL (3X6 FZMY)	
		462	353-136A	SCREW	SPECIAL(4.6X12.5 FBK)	
		463	1MBC0302418	BINDING HEAD MACHINE SCREW +	D 3.0 L 8.0 MSWR3/FZY	

EXPLODED VIEWS

1. Cabinet & Mainframe Section

NOTE) Refer to "SECTION 5 REPLACEMENT PARTS LIST" in order to look for the part number of each part.
★ Optional Parts

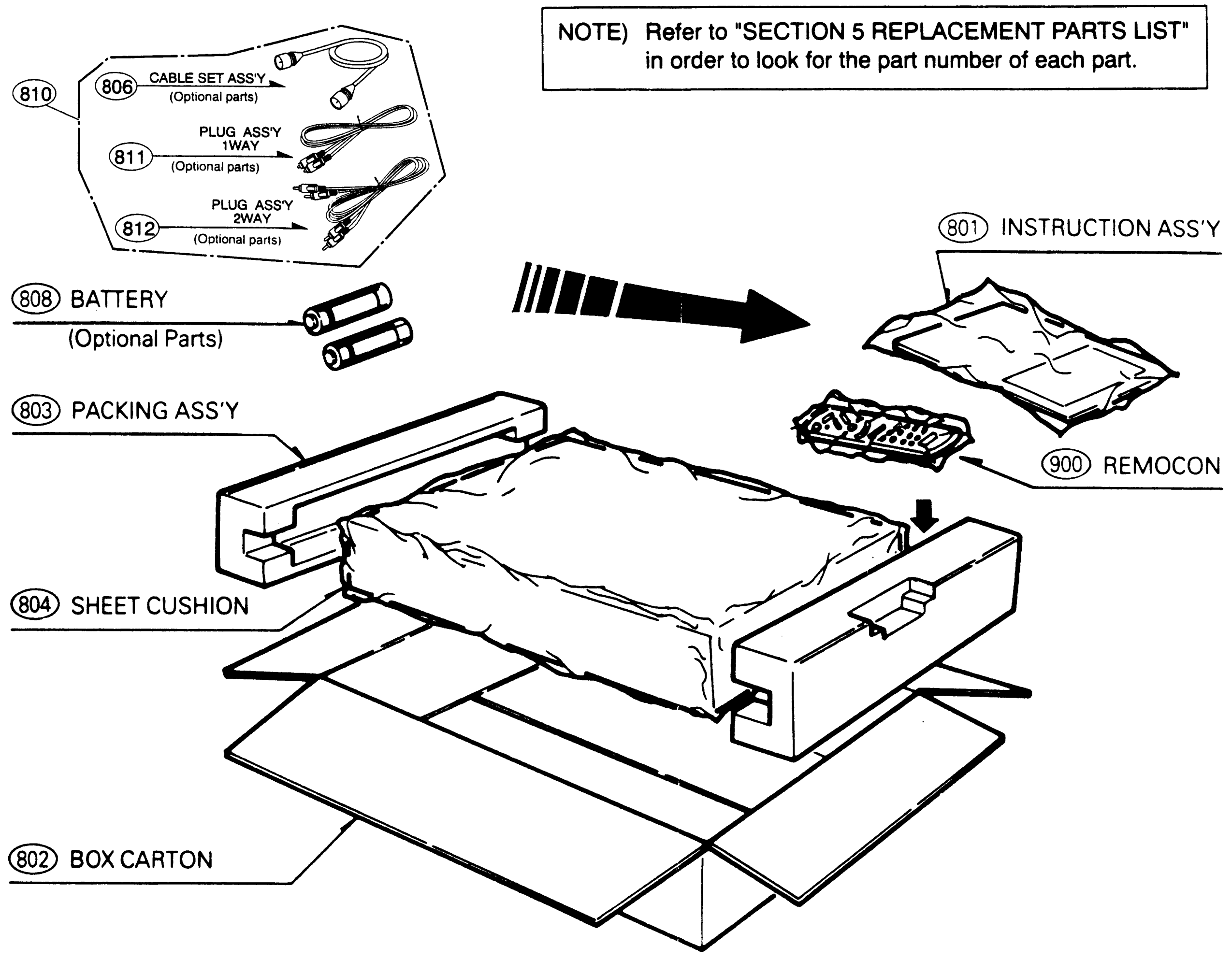

A44
300
452
452
462
250
A45
452
462
462
452
320
452
452
266
408
480
A20
(HOUSING ASSY)
265
267
268
260
270
458
PBI00
(IF C.B.A)
323
JK 904 ★
(JK 902)
JK 903 ★
(JK 901)
469
452
TU701
(TUNER)
452
269
452
A00
(DECK ASSY)
PBS00,PBPRE ★
(SCART,PREMIERE C.B.A)
RC601(Remocon receiver)
MD701 (Modulator)
A46
283
268
284
PBM00
(MAIN C.B.A)
275
280
DG601(DIGITRON)
PBTOO
TIMER C.B.A
330
452
452
452
452
452
452
A43
6
5
4
3
2
1
A
B
C
D
E
F
G
H
I

LOCATION GUIDE

A 00	A 3
A 20	A 4
A 43	C 1
A 44	D 5
A 45	G 5
A 46	H 3
PBT 00	D 1
PBI 00	G 3
PBS 00 (PBPRE)	G 3
PBM 00	G 2
RC 601	D 3
TU 701	G 3
MD 701	G 3
DG 601	2 D
JK 903 (JK 901)	G 3
JK 904 (JK 902)	G 4
250	F 5
260	F 4
265	D 4
266	C 5
267	E 4
268	C 4
269	D 4
270	F 4
275	E 2
280	C 2
283	B 3
284	D 2
300	D 5
320	H 4
323	G 4
330	G 2

2. Packing & Accessory Section

NOTE) Refer to "SECTION 5 REPLACEMENT PARTS LIST" in order to look for the part number of each part.

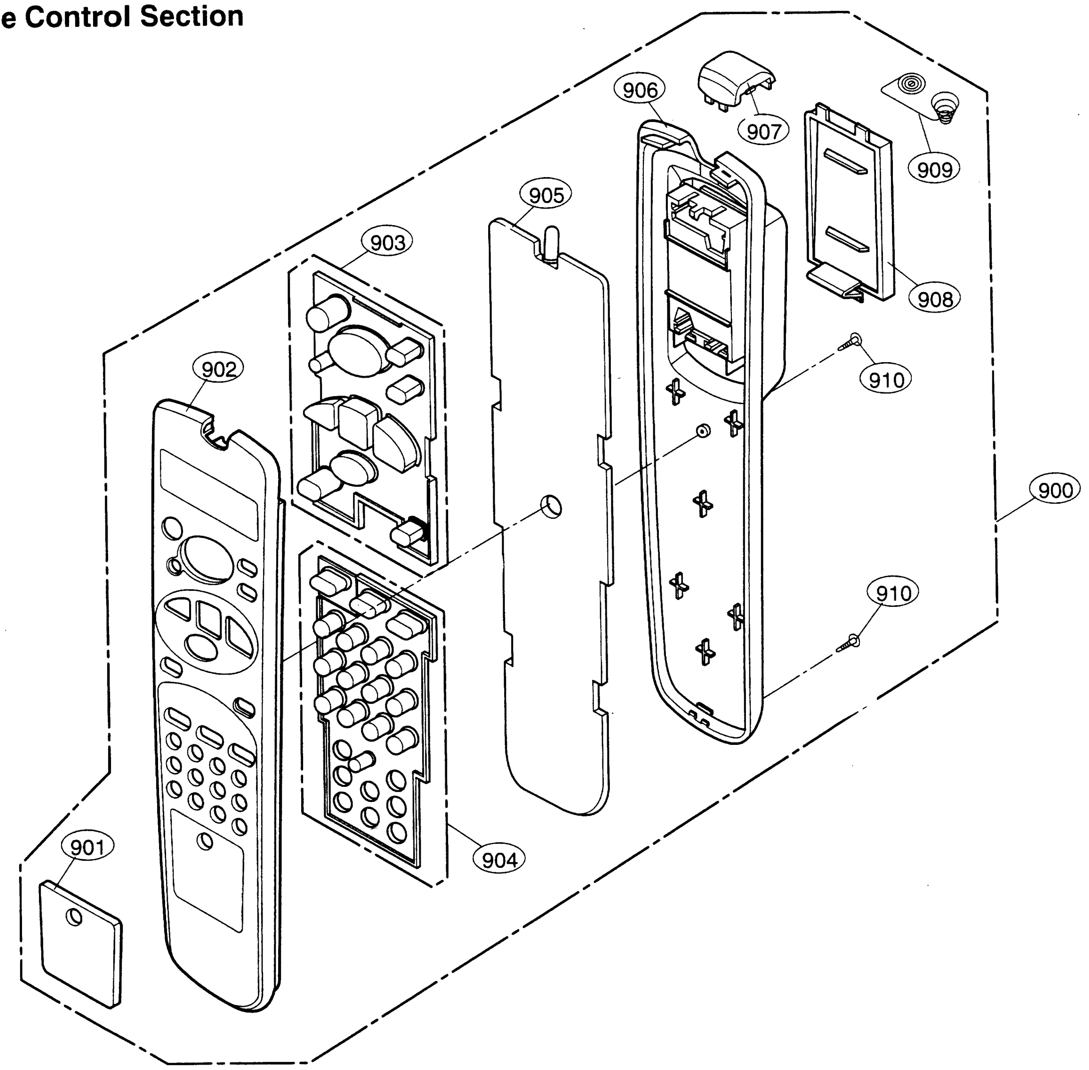

810
806 CABLE SET ASS'Y
(Optional parts)
PLUG ASS'Y
1WAY
811
(Optional parts)
PLUG ASS'Y
2WAY
812
(Optional parts)
808 BATTERY
(Optional Parts)
801 INSTRUCTION ASS'Y
803 PACKING ASS'Y
900 REMOCON
804 SHEET CUSHION
802 BOX CARTON

• Packing Accessory Section

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		801	3835RP0009A	INSTRUCTION ASSY	P934P 3GO3	
		802	3890R-G348A	BOX	P934P 3GO3	NSP
		803	283-292A	PACKING	PK10P EVENT	NSP
		804	291-002B	SHEET CUSHION	GHV-1900'S	NSP
		808	534-008C	BATTERY	AAAM(R03) 1.5V 1PAIR(LOCAL)	
		811	564-017B	PLUG ASSY	PHONO CORD 1WAY (YL)	
		812	564-018B	PLUG ASSY	PHONO CORD 2WAY (RD/WH)	

---

3. Remote Control Section


906
907
909
905
903
908
902
910
900
910
901
904

• Remote Control Section

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		900	6711R1P004M	REMOTE CONTROLLER ASSY	R/C ASSY(M3;P934P 3GO3)	
		901	3300R-0039A	PLATE	TOP(M3;P934NP EVNT)	NSP
		902	3110R-0022E	CASE	TOP(M3;P934P 3GO3)	NSP
		903	556-270B	SWITCH	RUBBER-A (P234I)	NSP
		904	556-271T	REMOTE CONTROL	RUBBER-B(M3) P433AS	NSP
		905	6871R-0406A	PWB ASSY!	M3 R/C NORMAL(P22P)	
		906	220-136A	COVER	BOTTOM (M3)	
		907	236-585A	WINDOW	FILTER (M3)	NSP
		908	220-137A	COVER	BATTERY (M3)	
		909	442-729A	SPRING	BATTERY-A	NSP
		910	1TPH0202016	PAN HEAD TAPPING SCREW + 2	D 2.0 L 6.0 MSWR3/(BK)	

SECTION 3 ELECTRICAL

ELECTRICAL ADJUSTMENT PROCEDURES

Electronic Test Equipment Requirement:

- Oscilloscope
- Video Signal Generator
- Modem Tester
- Level Meter
- Frequency Counter
- + Driver
- Test Tape (SP)
- Recording Tape
- Digital Multimeter
- Distortion Meter

1. Servo Circuit

1) ±PG Adjustment

MODE	SPECIFICATION	MEASUREMENT POINT	ADJUSTMENT POINT
Playback	6.5±0.5H (416μ sec, 1H=64μ sec)	TP 502 (H.SW) TP 301 (Video out)	VR501

Purpose:
For the phase dividing of the Video A, B heads with 180° and the exact tracking of each track to meet head switching point with VHS Spec.

Procedure:

a. Playback a PAL/SP test tape.

b. At this time, the "ATR" is lighting, after pressing the Up or Down Key and adjust the X-Value.

c. Connect CH-1 terminal of oscilloscope to TP 502(H.SW) and CH-2 terminal to video out terminal (TP301) of VCR.

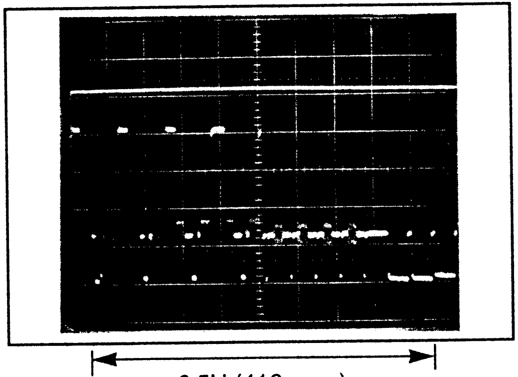
d. Trigger the complex Video signal of CH-2 to CH-1 H.SW, and adjust VR501 so that the distance from A(B) head selection point of H.SW signal to the starting point of horizontal synchronized signal is 6.5H (416μ sec, 1H=64μ sec).

Reference:

1. ±PG adjustment is practiced in the state of maximum RF level and locked servo system. (Manual tracking Mode.)
2. The deviation between A/B Head Adjustment location should be within ±0.5 H (32μ sec).
3. The deviation between the specification of adjustment and the practical measurement value should be within ±0.5H (32μ sec).
4. Oscilloscope and VCR set should be connected with GND.

Waveform

Composite Video Signal



6.5H (416μ sec)
H.SW (TP502)

Fig. 3-1

2. Audio Circuit

1) Record Oscillation Voltage Adjustment

MODE	SPECIFICATION	MEASUREMENT POINT	ADJUSTMENT POINT
Record	2.5mV±0.2mV	R400 (TP401(+), TP402(-))	VR401

Purpose:
This is for adjusting bias voltage to specification in recording.

Procedure:

a. Connect the Level Meter terminal to R400 (TP401(+), TP402(-).

b. Confirm that the Oscillation Voltage is 2.5mV± 0.2mV.

c. At this time, Adjust VR401 and make the Oscillation voltage fit to specification.

3. Tuner/IF Circuit

1) AFC Adjustment

MODE	SPECIFICATION	MEASUREMENT POINT	ADJUSTMENT POINT
CH-11 (217.25MHz) Normal Reception	DC 2.5±0.1V	W709 (IF Board) or W5H3 (Main Board)	T701

Procedure:

a. Select the TV Programme Mode on OSD Menu.
b. Be tuning PAL B/G CH-11 (217.25MHz, strength of RF electrical field : 70dBμV) fine.
c. Connect the Digital Voltmeter to W709(IF Board) or W5H3(Main Board).
d. Adjust T701 so that the Digital Voltmeter is DC 2.5± 0.1V.

2) RF AGC Adjustment

MODE	SPECIFICATION	MEASUREMENT POINT	ADJUSTMENT POINT
CCIR CH-11 Reception (Color Bar 70dBμ)	DC 4.3±0.1V	TUNER AGC terminal (W7A7)	VR701

Procedure:

a. Be tuning CH-11 (strength of input electric field: 70dBμ±1dBμ) fine.
b. Connect the Digital Multimeter to TUNER AGC Terminal (W7A7).
c. Adjust VR701 so that the digital multimeter is DC 4.3V±0.1V.

Reference:

Maintain the input gain in adjusting AGC faithfully.

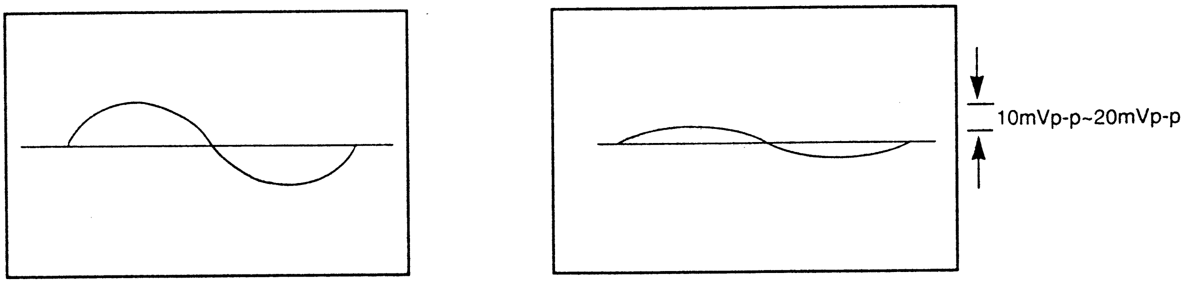
3) Stereo Correction Adjustment

MODE	SPECIFICATION	MEASUREMENT POINT	ADJUSTMENT POINT
CCIR CH-11 Reception (Stereo Mode, CH-9)	Minimum 10mVp-p~20mVp-p	PM 702 Pin③ or TP701(IF Board)	VR702

Procedure:

a. Connect the Pattern Generator to Video Input Terminal.
b. Connect the Oscilloscope to PM 702 Pin③.
c. At this time, Video Signal Generator must be switched to Stereo mode.
d. Be tuning CH-9 (203.25MHz) or CH-11(217.25MHz) fine.
e. Adjust VR702 so that the monitor waveform is as shown in Fig. 3-2.

Waveform



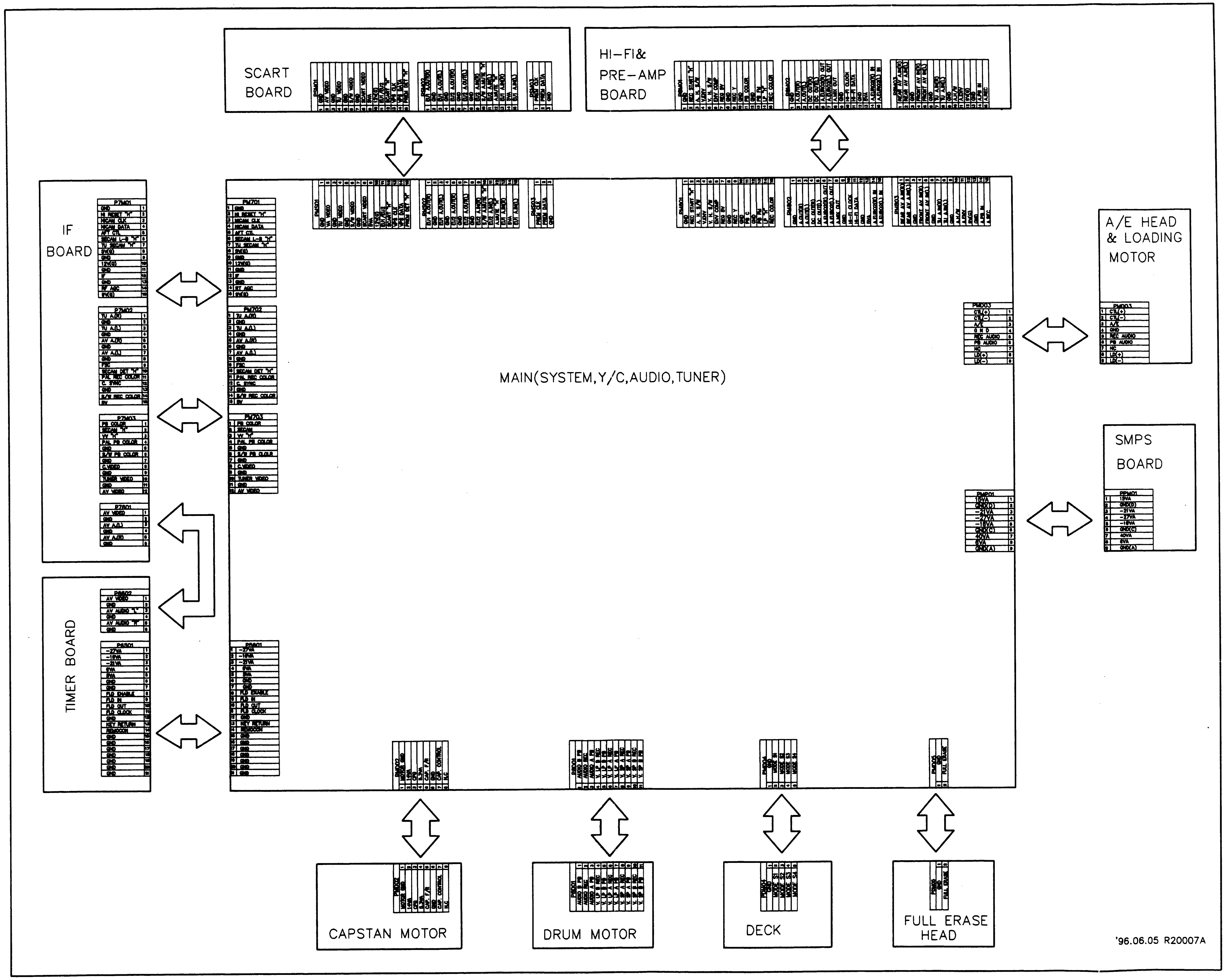
Before Adjustment

After Adjustment

Fig. 3-2

BLOCK & CIRCUIT DIAGRAMS

1. Connection Circuit Diagram


SCART BOARD
HI-FI& PRE-AMP BOARD
IF BOARD
P7M01
GND
NI RESET "H"
NICAM CLK
NICAM DATA
AFT CTL
SECAM L-B "H"
TU SECAM "H"
5V(G)
GND
12V(G)
GND
IF
GND
RF AGC
5V(G)
P7M02
TU A.(R)
GND
TU A.(L)
GND
AV A.(R)
GND
AV A.(L)
GND
FSC
SECAM DET "H"
PAL REC COLOR
C. SYNC
GND
S/W REC COLOR
5V
P7M03
PB COLOR
SECAM "H"
VV "H"
PAL PB COLOR
GND
S/W PB COLOR
GND
C.VIDEO
GND
TUNER VIDEO
GND
AV VIDEO
P7601
AV VIDEO
GND
AV A.(L)
GND
AV A.(R)
GND
TIMER BOARD
P6602
AV VIDEO
GND
AV AUDIO "L"
GND
AV AUDIO "R"
GND
P6501
-27VA
-15VA
-21VA
6VA
5VA
GND
GND
FLD ENABLE
FLD IN
FLD OUT
FLD CLOCK
GND
KEY RETURN
REMOCON
GND
GND
GND
GND
GND
GND
GND
PM701
PM702
PM703
P6601
MAIN(SYSTEM,Y/C,AUDIO,TUNER)
A/E HEAD & LOADING MOTOR
PMD03
CTL(+)
CTL(-)
A/E
GND
REC AUDIO
PB AUDIO
NC
LD(+)
LD(-)
SMPS BOARD
PPM01
15VA
GND(D)
-21VA
-27VA
-15VA
GND(C)
40VA
6VA
GND(A)
PMP01
CAPSTAN MOTOR
DRUM MOTOR
DECK
FULL ERASE HEAD
'96.06.05 R20007A

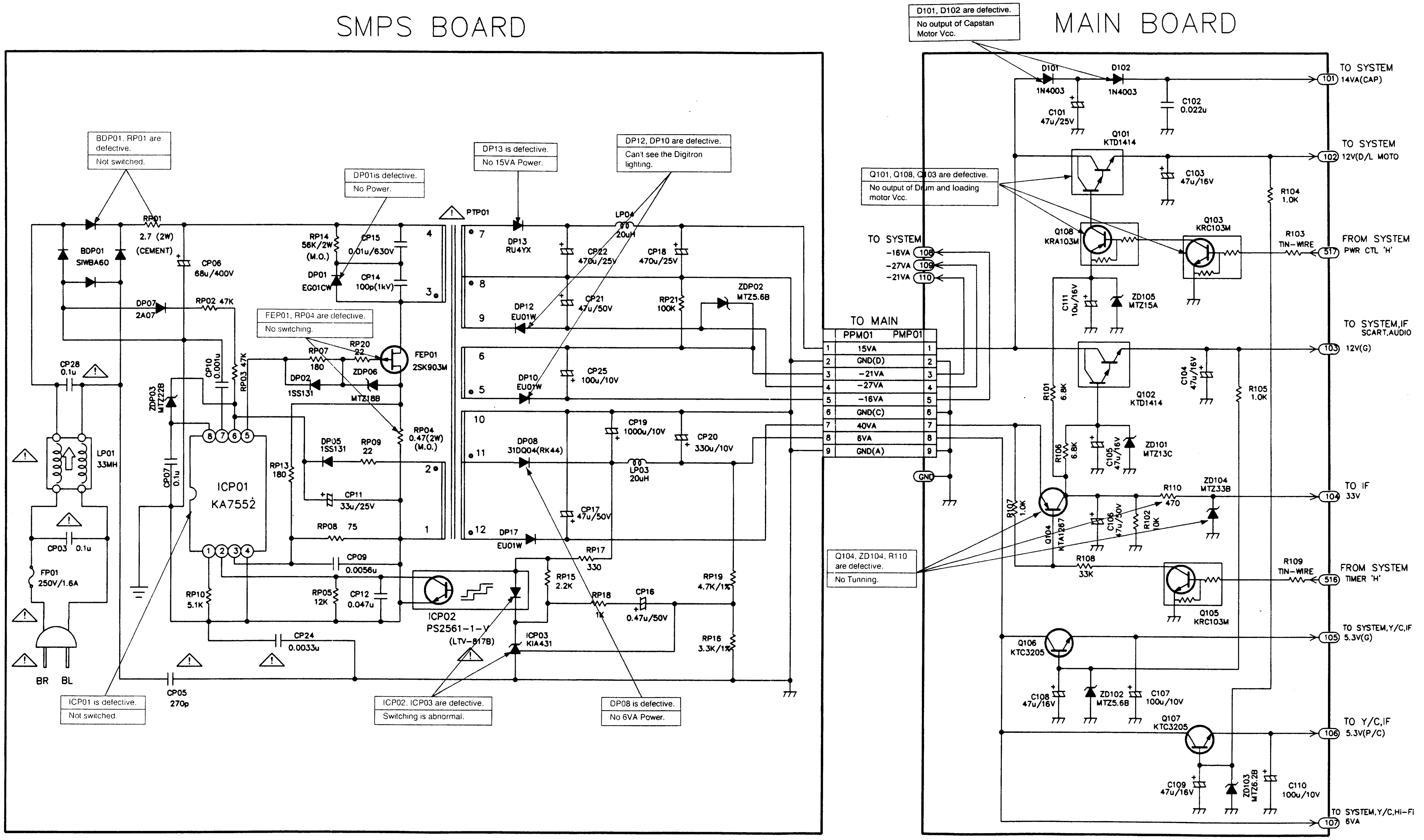
2. Power (SMPS) Circuit Diagram

Notes) 1.The components identified by mark ⚠ are critical for safety.

2.Warring: Parts that are shaded are critical with respect to risk of fire and electrical shock.

⏚ Symbol denotes earth ground.

⊥ Symbol denotes DC chassis ground.


SMPS BOARD
MAIN BOARD
BDP01
SIWBA60
RP01
2.7 (2W)
(CEMENT)
CP06
68u/400V
DP07
2A07
RP02 47K
CP28
0.1u
LP01
33MH
CP03 0.1u
FP01
250V/1.6A
BR BL
ZDP03
MTZ22B
CP10
0.001u
RP03 47K
CP07
0.1u
ICP01
KA7552
RP10
5.1K
CP24
0.0033u
CP05
270p
RP14
56K/2W
(M.O.)
DP01
EG01CW
CP15
0.01u/630V
CP14
100p(1kV)
RP07
180
RP20
22
DP02
1SS131
ZDP06
MTZ18B
FEP01
2SK903M
RP04
0.47(2W)
(M.O.)
RP13
180
DP05
1SS131
RP09
22
CP11
33u/25V
RP08 75
CP09
0.0056u
RP05
12K
CP12
0.047u
ICP02
PS2561-1-V
(LTV-817B)
ICP03
KIA431
PTP01
7
8
9
6
5
10
11
12
4
3
2
1
DP13
RU4YX
CP22
470u/25V
LP04
20uH
CP18
470u/25V
DP12
EU01W
CP21
47u/50V
RP21
100K
ZDP02
MTZ5.6B
DP10
EU01W
CP25
100u/10V
CP19
1000u/10V
CP20
330u/10V
DP08
31DQ04(RK44)
LP03
20uH
CP17
47u/50V
DP17
EU01W
RP17
330
RP15
2.2K
RP18
1K
CP16
0.47u/50V
RP19
4.7K/1%
RP16
3.3K/1%
TO MAIN
PPM01 PMP01
1 15VA 1
2 GND(D) 2
3 -21VA 3
4 -27VA 4
5 -16VA 5
6 GND(C) 6
7 40VA 7
8 6VA 8
9 GND(A) 9
GND
TO SYSTEM
-16VA 108
-27VA 109
-21VA 110
D101
1N4003
D102
1N4003
C101
47u/25V
C102
0.022u
Q101
KTD1414
C103
47u/16V
R104
1.0K
Q108
KRA103M
Q103
KRC103M
R103
TIN-WIRE
C111
10u/16V
ZD105
MTZ15A
Q102
KTD1414
C104
47u/16V
R105
1.0K
R101
6.8K
R106
6.8K
C105
47u/16V
ZD101
MTZ13C
R107
1.0K
Q104
KTA1267
C106
47u/50V
R102
10K
R110
470
ZD104
MTZ33B
R108
33K
Q105
KRC103M
R109
TIN-WIRE
Q106
KTC3205
C108
47u/16V
ZD102
MTZ5.6B
C107
100u/10V
Q107
KTC3205
C109
47u/16V
ZD103
MTZ6.2B
C110
100u/10V
TO SYSTEM 101 14VA(CAP)
TO SYSTEM 102 12V(D/L MOTO
FROM SYSTEM 517 PWR CTL 'H'
TO SYSTEM,IF SCART,AUDIO 103 12V(G)
TO IF 104 33V
FROM SYSTEM 516 TIMER 'H'
TO SYSTEM,Y/C,IF 105 5.3V(G)
TO Y/C,IF 106 5.3V(P/C)
TO SYSTEM,Y/C,Hi-Fi 107 6VA
8
7
6
5
4
3
2
1
A B C D E F G H I J K L M

BDP01, RP01 are defective.
Not switched.

DP01is defective.
No Power.

DP13 is defective.
No 15VA Power.

DP12, DP10 are defective.
Can't see the Digitron lighting.

FEP01, RP04 are defective.
No switching.

ICP01 is defective.
Not switched.

ICP02, ICP03 are defective.
Switching is abnormal.

DP08 is defective.
No 6VA Power.

D101, D102 are defective.
No output of Capstan Motor Vcc.

Q101, Q108, Q103 are defective.
No output of Drum and loading motor Vcc.

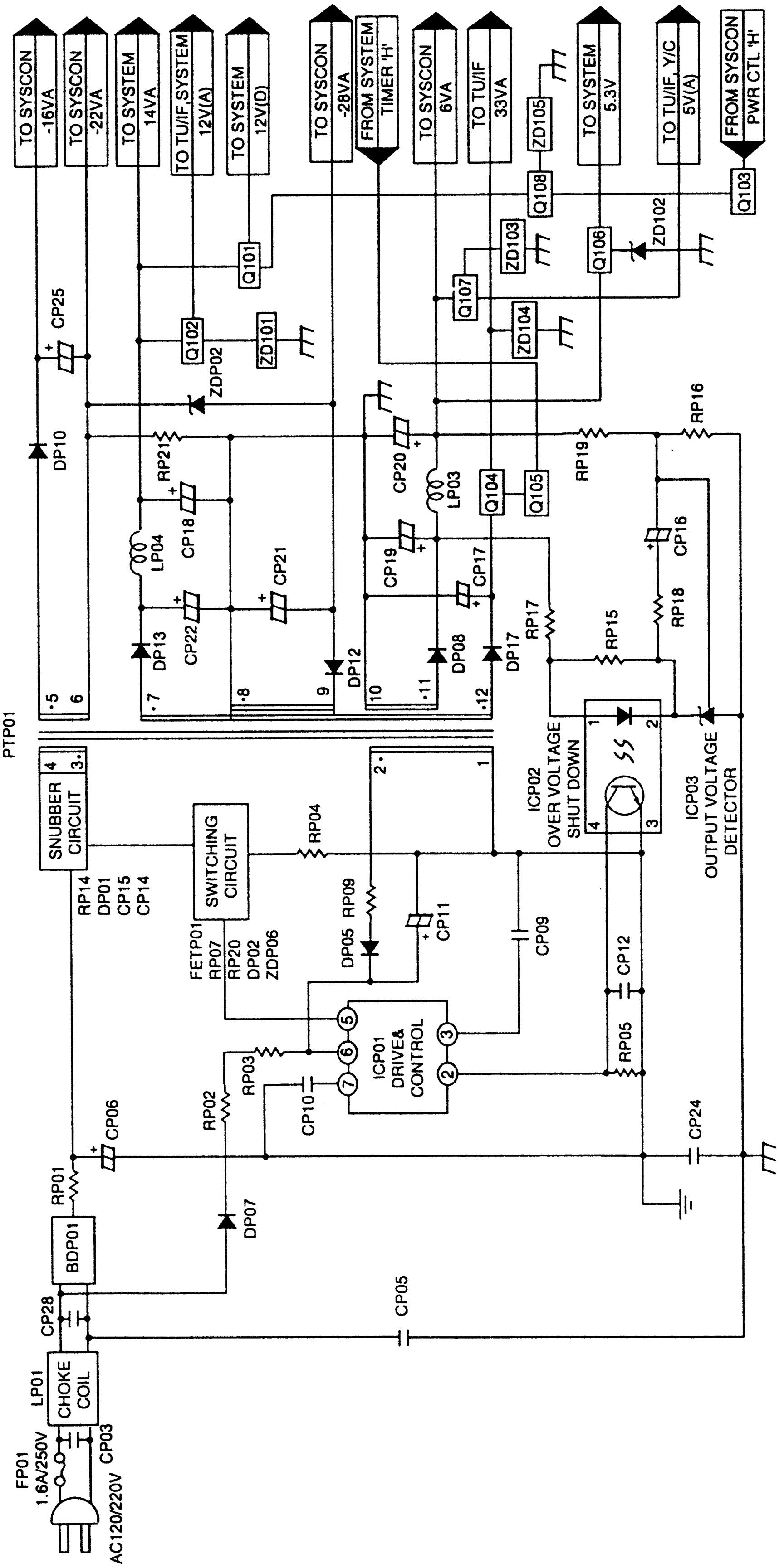
Q104, ZD104, R110 are defective.
No Tunning.

LOCATION GUIDE

BDP01	B6	R107	I4
C101	I7	R108	I4
C102	J7	R109	K4
C103	J7	R110	J4
C104	J5	RP01	B6
C105	J4	RP02	C6
C106	J4	RP03	C5
C107	J2	RP04	D5
C108	I2	RP05	C3
C109	J2	RP07	C5
C110	K2	RP08	D4
C111	I6	RP09	D4
CP03	A4	RP10	B3
CP05	B2	RP13	C4
CP06	C6	RP14	C6
CP07	B4	RP15	E3
CP09	D4	RP16	G3
CP10	C5	RP17	F4
CP11	D4	RP18	F3
CP12	D3	RP19	G3
CP14	D6	RP20	D5
CP15	D6	RP21	F6
CP16	F3	ZD101	J4
CP17	F4	ZD102	J2
CP18	F6	ZD103	K2
CP19	F5	ZD104	J4
CP20	F4	ZD105	J6
CP21	F6	ZDP02	G6
CP22	F6	ZDP03	B5
CP24	C3	ZDP06	D5
CP25	F5		
CP28	A5		
D101	I7		
D102	J7		
DP01	C6		
DP02	C5		
DP05	D4		
DP07	B6		
DP08	E4		
DP10	E5		
DP12	E6		
DP13	E6		
DP17	E4		
FEP01	D5		
FP01	A3		
ICP01	C4		
ICP02	D3		
ICP03	E3		
LP01	B4		
LP03	F4		
LP04	F6		
PMP01	H5		
PPM01	H5		
PTP01	E6		
Q101	J7		
Q102	J5		
Q103	J6		
Q104	I4		
Q105	J3		
Q106	I3		
Q107	J2		
Q108	I6		
R101	I5		
R102	J4		
R103	K6		
R104	K6		
R105	K5		
R106	I4		

'96.05.16 7-989A

● Power (SMPS) Block Diagram


TO SYSCON -16VA
TO SYSCON -22VA
TO SYSTEM 14VA
TO TU/IF,SYSTEM 12V(A)
TO SYSTEM 12V(D)
TO SYSCON -28VA
FROM SYSTEM TIMER 'H'
TO SYSCON 6VA
TO TU/IF 33VA
TO SYSTEM 5.3V
TO TU/IF, Y/C 5V(A)
FROM SYSCON PWR CTL 'H'
Q101
Q102
Q103
Q104
Q105
Q106
Q107
Q108
ZD101
ZD102
ZD103
ZD104
ZD105
ZDP02
CP25
DP10
RP21
CP18
LP04
CP22
CP21
DP13
DP12
CP20
LP03
CP19
CP17
DP08
DP17
RP19
RP16
CP16
RP17
RP15
RP18
PTP01
SNUBBER CIRCUIT
RP14
DP01
CP15
CP14
SWITCHING CIRCUIT
FETP01
RP07
RP20
DP02
ZDP06
RP04
RP09
DP05
CP11
CP09
ICP02 OVER VOLTAGE SHUT DOWN
ICP03 OUTPUT VOLTAGE DETECTOR
CP12
RP05
ICP01 DRIVE& CONTROL
RP03
CP10
RP02
CP06
RP01
DP07
CP24
BDP01
CP28
CP05
LP01
CHOKE COIL
FP01 1.6A/250V
CP03
AC120/220V

SECTION 3 ELECTRICAL

3. Audio Block Diagram

★ Audio IC/TR Voltage Sheet

PB(REC)

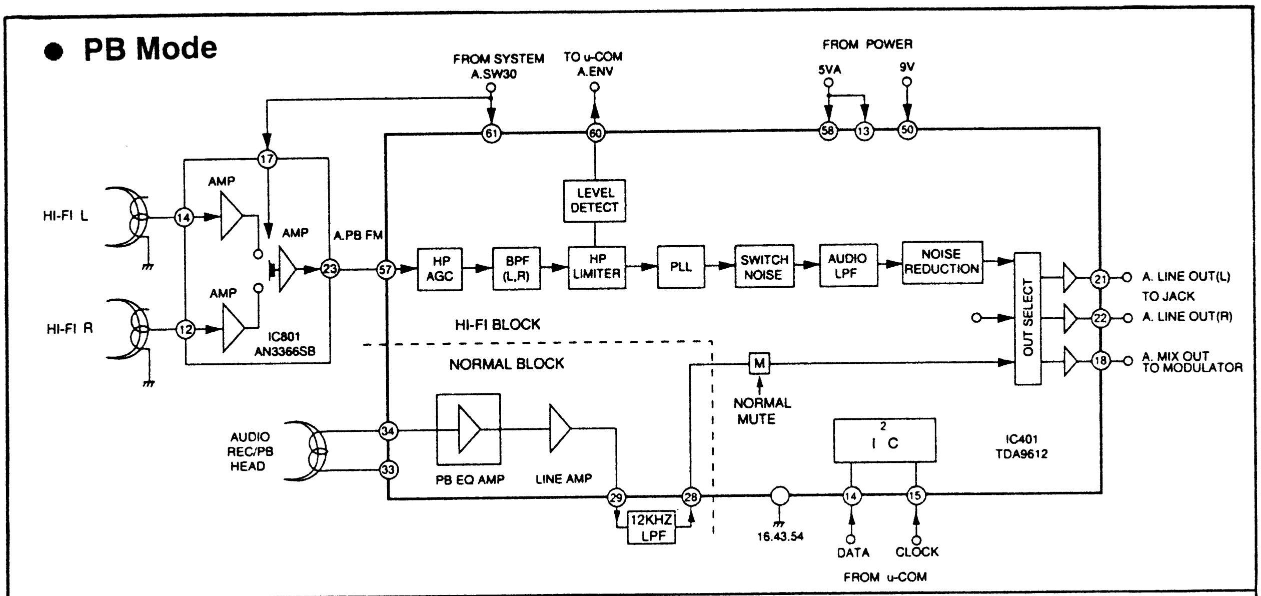
IC402 (BA7755A)

1				5
8.8 (8.8)	0.0 (0.0)	0.0 (0.0)	0.0 (5.1)	5.3 (5.3)

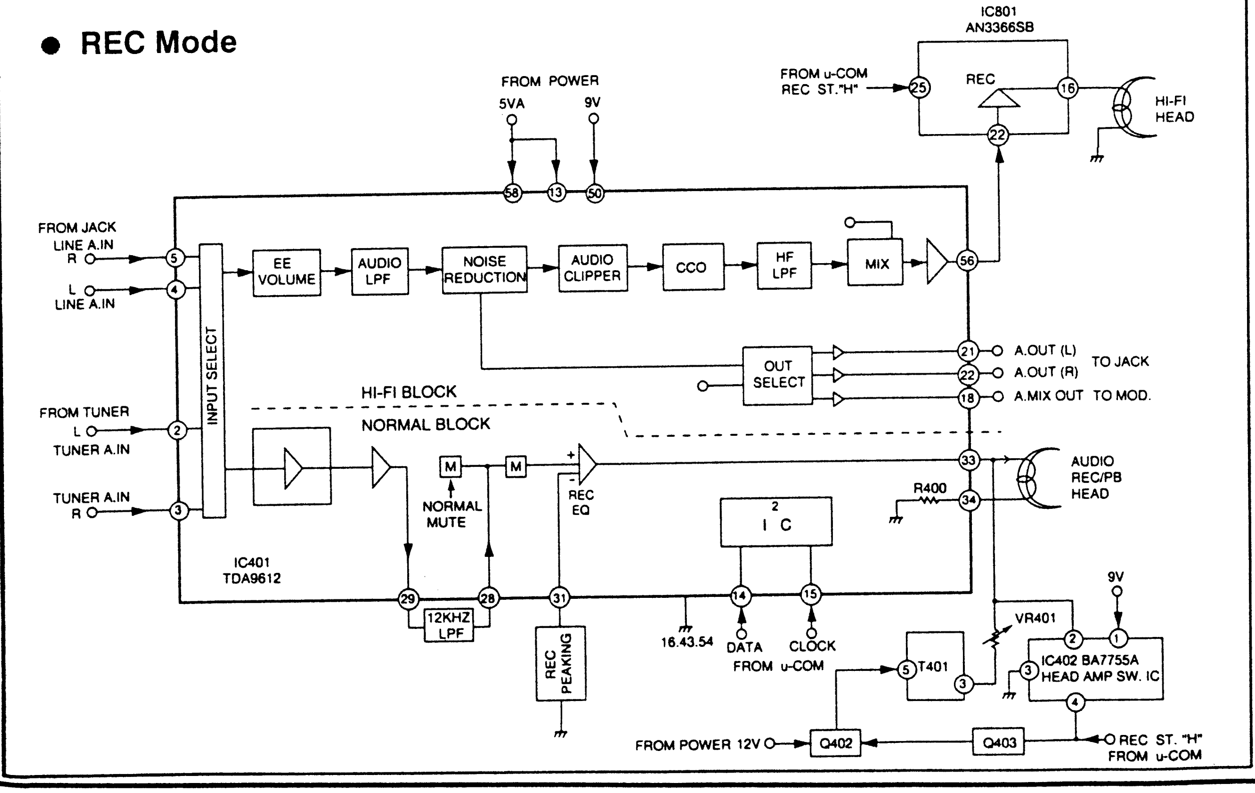
(UNIT:V)

TR NO. \ Port	Emitter		Collector		Base	
	PB	REC	PB	REC	PB	REC
Q401	9.0	9.0	12.3	12.2	9.6	9.6
Q402	12.3	12.4	0.3	12.3	12.3	11.6
Q403	0.0	0.0	12.3	0.1	0.0	5.1
Q404	0.0	0.7	0.3	12.0	0.3	1.1
Q405	0.0	0.0	0.0	0.0	0.0	0.0

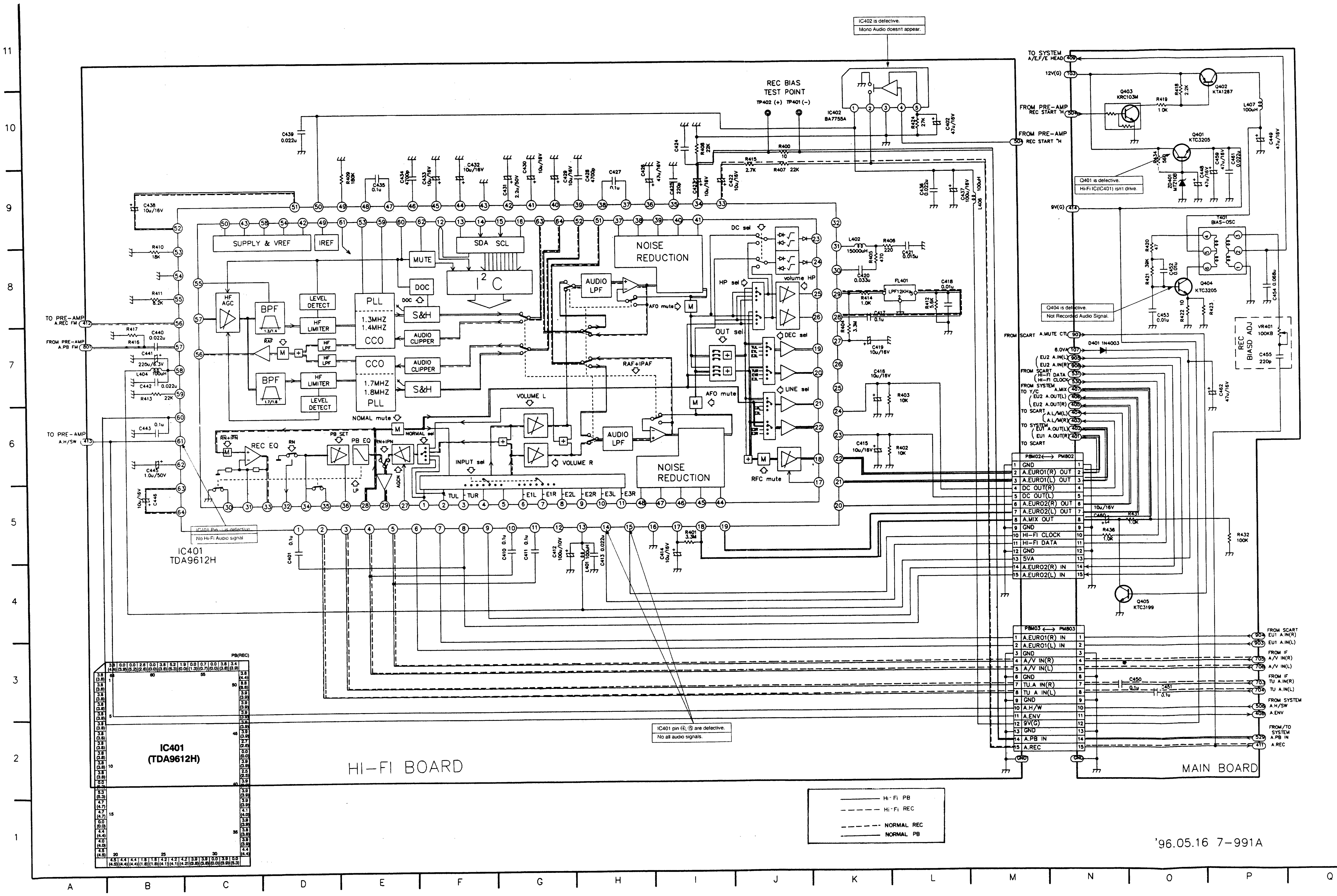
● PB Mode


FROM SYSTEM A.SW30
TO u-COM A.ENV
FROM POWER
5VA
9V
61
60
58
13
50
17
HI-FI L
14
AMP
AMP
AMP
A.PB FM
23
HI-FI R
12
IC801 AN3366SB
57
HP AGC
BPF (L,R)
LEVEL DETECT
HP LIMITER
PLL
SWITCH NOISE
AUDIO LPF
NOISE REDUCTION
OUT SELECT
21
A. LINE OUT(L)
TO JACK
22
A. LINE OUT(R)
18
A. MIX OUT TO MODULATOR
HI-FI BLOCK
NORMAL BLOCK
M
NORMAL MUTE
AUDIO REC/PB HEAD
34
33
PB EQ AMP
LINE AMP
29
28
12KHZ LPF
2
I C
IC401 TDA9612
16.43.54
14
15
DATA
CLOCK
FROM u-COM

● REC Mode


IC801 AN3366SB
FROM u-COM REC ST."H"
25
REC
16
22
HI-FI HEAD
FROM POWER
5VA
9V
58
13
50
FROM JACK LINE A.IN R
5
L
4
LINE A.IN
INPUT SELECT
EE VOLUME
AUDIO LPF
NOISE REDUCTION
AUDIO CLIPPER
CCO
HF LPF
MIX
56
OUT SELECT
21
A.OUT (L)
22
A.OUT (R)
TO JACK
18
A.MIX OUT TO MOD.
HI-FI BLOCK
NORMAL BLOCK
FROM TUNER L
2
TUNER A.IN
TUNER A.IN R
3
M
M
NORMAL MUTE
+
-
REC EQ
33
AUDIO REC/PB HEAD
R400
34
2
I C
IC401 TDA9612
29
28
12KHZ LPF
31
REC PEAKING
16.43.54
14
15
DATA
CLOCK
FROM u-COM
9V
VR401
2
1
5
T401
3
3
IC402 BA7755A HEAD AMP SW. IC
4
FROM POWER 12V
Q402
Q403
REC ST. "H" FROM u-COM

● Audio Circuit Diagram

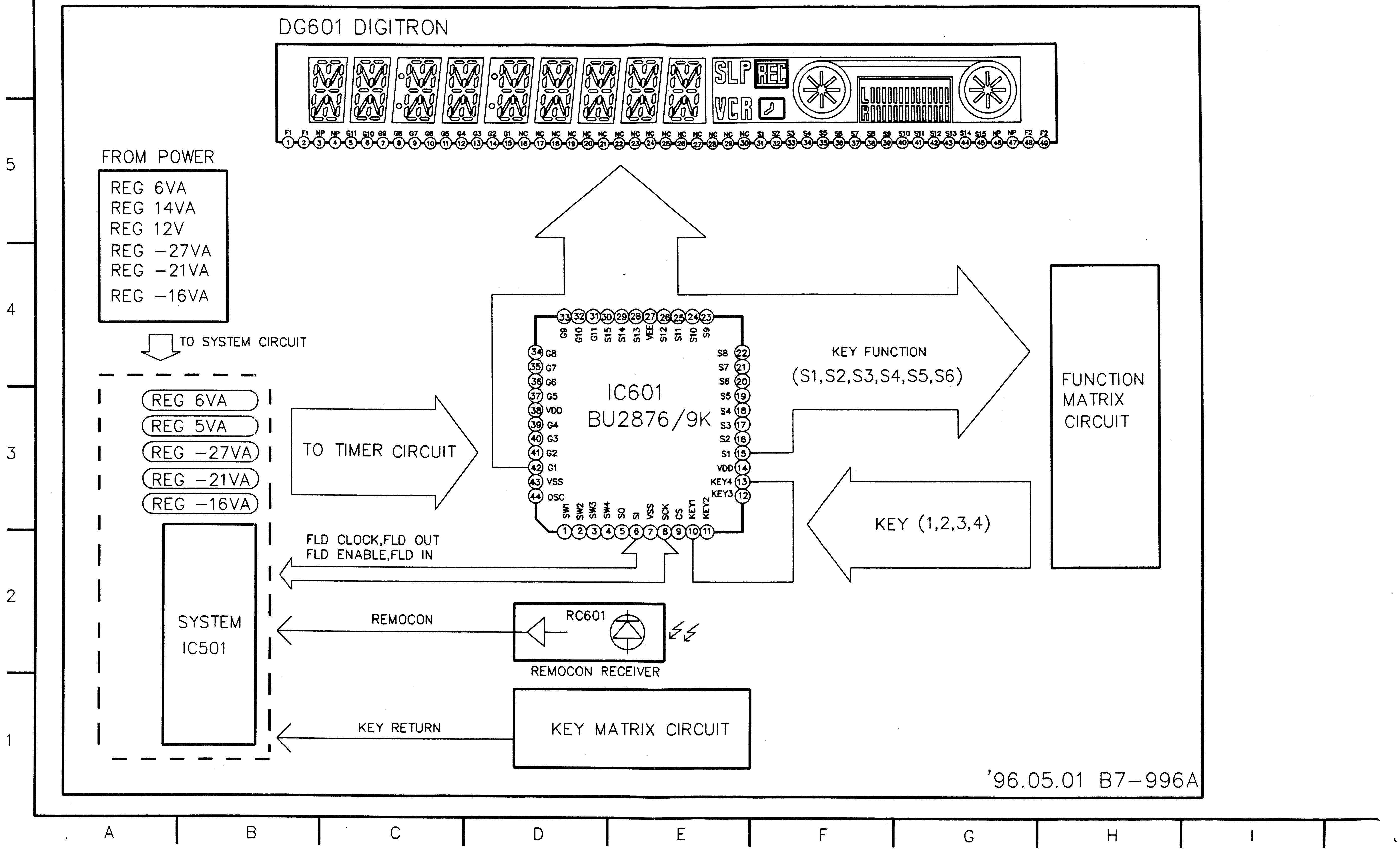

IC402 is defective.
Mono Audio doesn't appear.
REC BIAS
TEST POINT
TP402 (+) TP401 (-)
IC402
BA7755A
TO SYSTEM
A/E/F/E HEAD
12V(G)
FROM PRE-AMP
REC START "H
Q403
KRC103M
Q402
KTA1267
Q401
KTC3205
L407
100uH
Q401 is defective.
Hi-Fi IC(IC401) isn't drive.
ZD401
MTZ10B
9V(G)
T401
BIAS-OSC
Q404
KTC3205
Q404 is defective.
Not Recorded Audio Signal.
FROM SCART A.MUTE CTL
D401 1N4003
REC BIASD ADJ
VR401
100KB
SUPPLY & VREF
IREF
MUTE
SDA SCL
I²C
DOC
NOISE REDUCTION
HF AGC
BPF
LEVEL DETECT
HF LIMITER
PLL
1.3MHZ
1.4MHZ
CCO
1.7MHZ
1.8MHZ
S&H
AUDIO CLIPPER
AUDIO LPF
AFO mute
RAF+IPAF
DC sel
HP sel
volume HP
OUT sel
DEC sel
LINE sel
AFO mute
RFC mute
VOLUME L
VOLUME R
NORMAL mute
REC EQ
PB SET
PB EQ
INPUT sel
TO PRE-AMP A.REC FM
FROM PRE-AMP A.PB FM
TO PRE-AMP A.H/SW
IC401 Pin [illegible] is defective.
No Hi-Fi Audio signal
IC401
TDA9612H
IC401 pin ⑭, ⑮ are defective.
No all audio signals.
P8M02 ⟷ PM802
1 GND
2 A.EURO1(R) OUT
3 A.EURO1(L) OUT
4 DC OUT(R)
5 DC OUT(L)
6 A.EURO2(R) OUT
7 A.EURO2(L) OUT
8 A.MIX OUT
9 GND
10 HI-FI CLOCK
11 HI-FI DATA
12 GND
13 5VA
14 A.EURO2(R) IN
15 A.EURO2(L) IN
P8M03 ⟷ PM803
1 A.EURO1(R) IN
2 A.EURO1(L) IN
3 GND
4 A/V IN(R)
5 A/V IN(L)
6 GND
7 TU.A IN(R)
8 TU A IN(L)
9 GND
10 A.H/W
11 A.ENV
12 9V(G)
13 GND
14 A.PB IN
15 A.REC
Q405
KTC3199
IC401
(TDA9612H)
PB(REC)
HI-FI BOARD
MAIN BOARD
Hi-Fi PB
Hi-Fi REC
NORMAL REC
NORMAL PB
11
10
9
8
7
6
5
4
3
2
1
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
Q

'96.05.16 7-991A

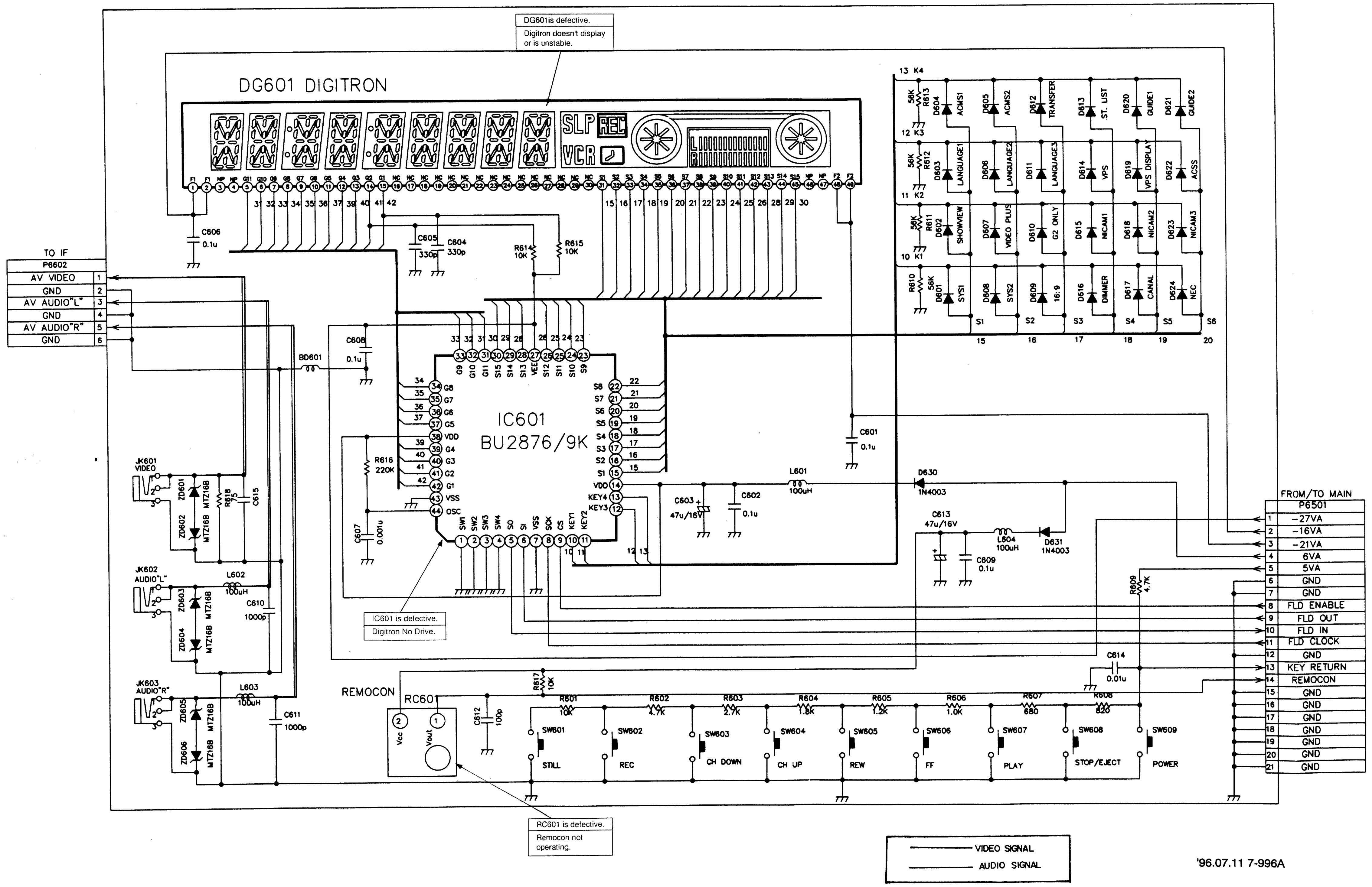
LOCATION GUIDE

C401	D4
C402	L10
C410	G5
C411	G4
C412	G5
C413	H4
C414	I4
C415	K6
C416	K7
C417	K8
C418	L8
C419	K7
C420	K8
C421	L8
C422	J9
C423	I9
C424	I10
C425	I9
C426	H9
C427	H9
C428	H9
C429	G9
C430	G9
C431	G9
C432	F9
C433	F9
C434	E9
C435	E9
C436	L9
C437	L9
C438	B9
C439	D10
C440	B7
C441	B7
C442	B7
C443	B6
C445	B6
C446	B5
C448	P9
C449	P10
C450	O3
C451	O3
C452	O8
C453	O8
C454	P8
C455	P7
C459	P9
C460	N5
C461	P9
C462	P7
D401	N7
FL401	L8
IC401	B5
IC402	K10
L401	H4
L402	K9
L404	B7
L406	M9
L407	P10
P8M02	M6
P8M03	M4
PM802	N6
PM803	N4
Q401	O10
Q402	P10
Q403	N10
Q404	O8
Q405	O4
R400	J10
R401	I5
R402	L6
R403	L7
R404	K7
R405	K8
R406	K8
R407	J9
R408	I10
R409	E9
R410	B8
R411	B8
R412	L8
R413	B7
R414	K8
R415	J10
R416	B7
R417	B7
R418	O10
R419	O10
R420	O8
R421	O8
R422	O7
R423	P8
R424	L10
R431	O5
R432	P5
R434	O9
R436	N5
T401	P9
TP401	J10
TP402	J10
VR401	P7
ZD401	O9

4. Timer/Key Board Block Diagram


DG601 DIGITRON
SLP
REC
VCR
FROM POWER
REG 6VA
REG 14VA
REG 12V
REG −27VA
REG −21VA
REG −16VA
TO SYSTEM CIRCUIT
REG 6VA
REG 5VA
REG −27VA
REG −21VA
REG −16VA
SYSTEM
IC501
TO TIMER CIRCUIT
IC601
BU2876/9K
G9 G10 G11 S15 S14 S13 VEE S12 S11 S10 S9
G8 G7 G6 G5 VDD G4 G3 G2 G1 VSS OSC
S8 S7 S6 S5 S4 S3 S2 S1 VDD KEY4 KEY3
SW1 SW2 SW3 SW4 SO SI VSS SCK CS KEY1 KEY2
KEY FUNCTION
(S1,S2,S3,S4,S5,S6)
FUNCTION
MATRIX
CIRCUIT
KEY (1,2,3,4)
FLD CLOCK,FLD OUT
FLD ENABLE,FLD IN
REMOCON
RC601
REMOCON RECEIVER
KEY RETURN
KEY MATRIX CIRCUIT
'96.05.01 B7−996A
1
2
3
4
5
A
B
C
D
E
F
G
H
I

● Timer/Key Board Circuit Diagram



DG601 DIGITRON
SLP
REC
VCR
IC601
BU2876/9K
TO IF
P6602
1 AV VIDEO
2 GND
3 AV AUDIO"L"
4 GND
5 AV AUDIO"R"
6 GND
FROM/TO MAIN
P6501
1 -27VA
2 -16VA
3 -21VA
4 6VA
5 5VA
6 GND
7 GND
8 FLD ENABLE
9 FLD OUT
10 FLD IN
11 FLD CLOCK
12 GND
13 KEY RETURN
14 REMOCON
15 GND
16 GND
17 GND
18 GND
19 GND
20 GND
21 GND
JK601 VIDEO
JK602 AUDIO"L"
JK603 AUDIO"R"
ZD601 MTZ16B
ZD602 MTZ16B
ZD603 MTZ16B
ZD604 MTZ16B
ZD605 MTZ16B
ZD606 MTZ16B
R618 75
C615
L602 100uH
C610 1000p
L603 100uH
C611 1000p
BD601
C606 0.1u
C605 330p
C604 330p
R614 10K
R615 10K
C608 0.1u
R616 220K
C607 0.001u
C601 0.1u
L601 100uH
C603 47u/16V
C602 0.1u
D630 1N4003
C613 47u/16V
L604 100uH
D631 1N4003
C609 0.1u
R609 4.7K
C614 0.01u
REMOCON
RC601
Vcc
Vout
C612 100p
R617 10K
R601 10K
R602 4.7K
R603 2.7K
R604 1.8K
R605 1.2K
R606 1.0K
R607 680
R608 820
SW601 STILL
SW602 REC
SW603 CH DOWN
SW604 CH UP
SW605 REW
SW606 FF
SW607 PLAY
SW608 STOP/EJECT
SW609 POWER
13 K4
12 K3
11 K2
10 K1
R613 56K
R612 56K
R611 56K
R610 56K
D604 ACMS1
D605 ACMS2
D612 TRANSFER
D613 ST. LIST
D620 GUIDE1
D621 GUIDE2
D603 LANGUAGE1
D606 LANGUAGE2
D611 LANGUAGE3
D614 VPS
D619 VPS DISPLAY
D622 ACSS
D602 SHOWVIEW
D607 VIDEO PLUS
D610 G2 ONLY
D615 NICAM1
D618 NICAM2
D623 NICAM3
D601 SYS1
D608 SYS2
D609 16:9
D616 DIMMER
D617 CANAL
D624 NEC
S1 S2 S3 S4 S5 S6
15 16 17 18 19 20
G9 G10 G11 S15 S14 S13 VEE S12 S11 S10 S9
G8 G7 G6 G5 VDD G4 G3 G2 G1 VSS OSC
S8 S7 S6 S5 S4 S3 S2 S1 VDD KEY4 KEY3 KEY2
SW1 SW2 SW3 SW4 SO SI VSS SCK CS KEY1 KEY2

DG601is defective.
Digitron doesn't display or is unstable.

IC601 is defective.
Digitron No Drive.

RC601 is defective.
Remocon not operating.

VIDEO SIGNAL
AUDIO SIGNAL

'96.07.11 7-996A

LOCATION GUIDE

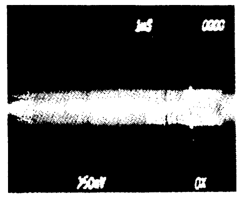
BD601	C5
C601	H4
C602	G4
C603	F4
C604	D6
C605	D6
C606	B6
C607	D3
C608	D5
C609	I3
C610	C3
C611	C2
C612	E2
C613	H4
C614	J2
C615	C4
D601	H5
D602	H6
D603	H6
D604	H7
D605	I7
D606	I6
D607	I6
D608	I5
D609	I5
D610	I6
D611	I6
D612	I7
D613	J7
D614	J6
D615	I6
D616	J5
D617	J5
D618	J6
D619	J6
D620	J7
D621	J7
D622	J6
D623	J6
D624	J5
D630	H4
D631	I3
DG601	C7
IC601	E4
JK601	B4
JK602	B3
JK603	B2
L601	G4
L602	C3
L603	C2
L604	I3
P6501	K4
P6602	A6
R601	E2
R602	F2
R603	G2
R604	G2
R605	H2
R606	H2
R607	I2
R608	J2
R609	J3
R610	H5
R611	H6
R612	H6
R613	H7
R614	E6
R615	E6
R616	D4
R617	E2
R618	C4
RC601	D2
SW601	E2
SW602	F2
SW603	F2
SW604	G2
SW605	H2
SW606	H2
SW607	I2
SW608	I2
SW609	J2
ZD601	B4
ZD602	B3
ZD603	B3
ZD604	B3
ZD605	B2
ZD606	B2

8 7 6 5 4 3 2 1

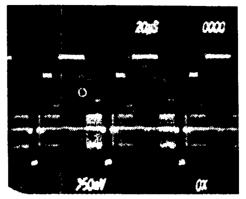
A B C D E F G H I J K L M

5. Tuner/IF Block Diagram

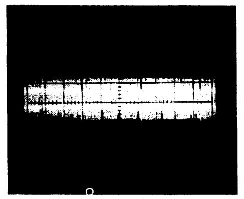
★ Tuner/IF Oscilloscope Waveform

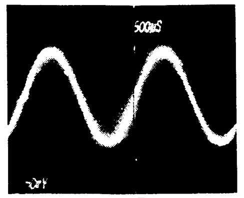
①


Q709 Collector
(50mV/1msec)

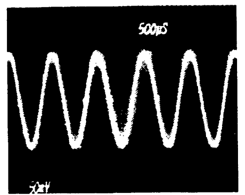
②


P7M03 Pin ⑩
(50mV/20μsec)

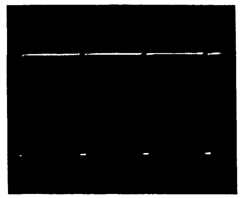
③

IC701 Pin ㉔
(50mV/20μsec)

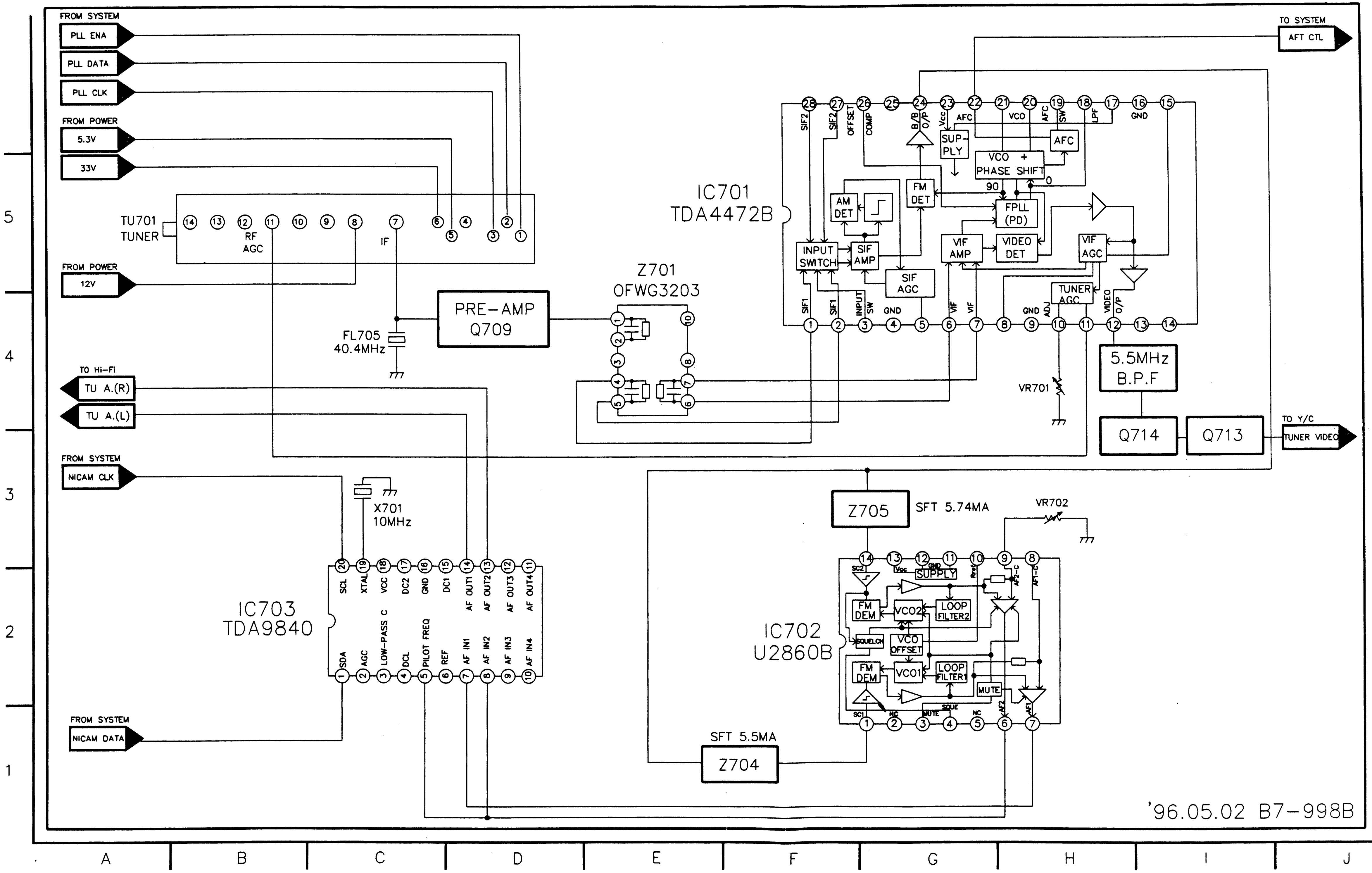
④


IC703 Pin ⑬
(50mV/500μsec)

⑤


IC703 Pin ⑭
(50mV/500μsec)

⑥

C712
(1V/20μsec)


FROM SYSTEM
PLL ENA
PLL DATA
PLL CLK
FROM POWER
5.3V
33V
TU701
TUNER
RF AGC
IF
FROM POWER
12V
TO Hi-Fi
TU A.(R)
TU A.(L)
FROM SYSTEM
NICAM CLK
FROM SYSTEM
NICAM DATA
FL705
40.4MHz
PRE-AMP
Q709
Z701
OFWG3203
IC701
TDA4472B
SIF2
SIF2
OFFSET
COMP
B/B O/P
Vcc
AFC
VCO
AFC SW
LPF
GND
SUP-PLY
AFC
VCO + PHASE SHIFT
90
0
AM DET
FM DET
FPLL (PD)
INPUT SWITCH
SIF AMP
SIF AGC
VIF AMP
VIDEO DET
VIF AGC
TUNER AGC
SIF1
SIF1
INPUT SW
GND
VIF
VIF
GND
ADJ
VIDEO O/P
TO SYSTEM
AFT CTL
5.5MHz B.P.F
VR701
Q714
Q713
TO Y/C
TUNER VIDEO
X701
10MHz
IC703
TDA9840
SCL
XTAL
VCC
DC2
GND
DC1
AF OUT1
AF OUT2
AF OUT3
AF OUT4
SDA
AGC
LOW-PASS C
DCL
PILOT FREQ
REF
AF IN1
AF IN2
AF IN3
AF IN4
Z705
SFT 5.74MA
VR702
IC702
U2860B
SC2
Vcc
GND
SUPPLY
Rref
AF2-C
AF1-C
FM DEM
VCO2
LOOP FILTER2
SQUELCH
VCO OFFSET
FM DEM
VCO1
LOOP FILTER1
MUTE
SC1
NC
MUTE
SQUE
NC
AF2
AF1
SFT 5.5MA
Z704
'96.05.02 B7-998B
A
B
C
D
E
F
G
H
I
J
K
1
2
3
4
5

★ Tuner/IF IC/TR Voltage Sheet

IC701 (TDA4472B)

0.14	0.14	2.59	0.00	2.14	4.70	3.36	3.32	3.32	3.48	2.25	4.27	0.00	0
28			25					20					15
1				5					10				
3.15	3.16	3.48	0.00	0.00	2.41	2.41	2.17	0.00	1.03	5.20	2.15	3.48	0.39

IC702 (U2860B)

1.77	4.93	0.00	4.31	1.75	2.03	2.00
14				10		
1				5		
1.78	0.00	3.01	3.01	0.00	2.38	2.24

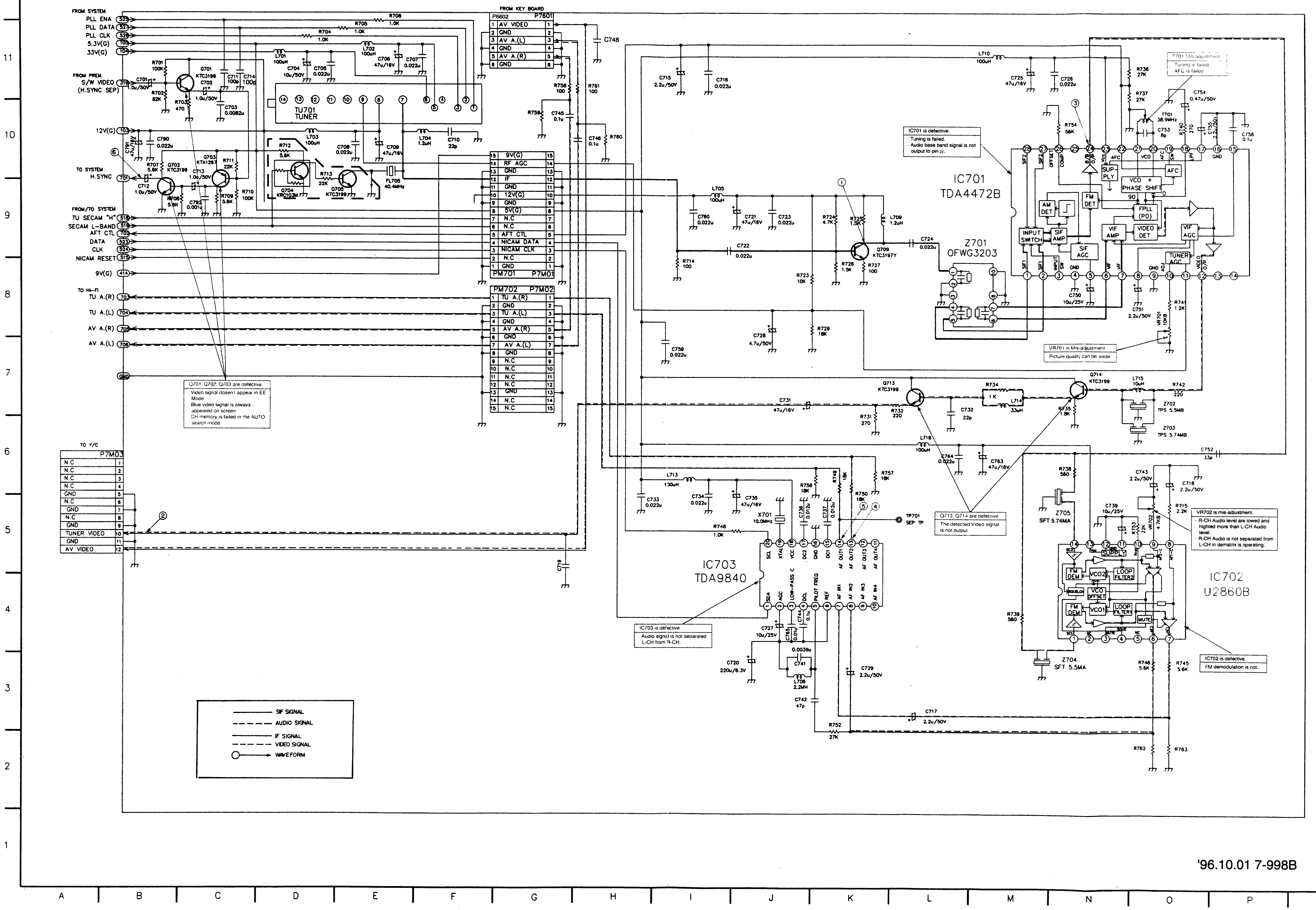
IC703 (TDA9840)

2.49	2.49	2.49	2.50	2.49	0.00	2.49	4.97	3.19	4.84
20					15				11
1				5					10
4.83	3.95	3.25	2.49	2.48	2.48	2.47	2.47	2.47	2.47

(UNIT:V)

TR NO. / Port	Emitter	Collector	Base
Q701	4.23	12.44	4.84
Q702	0.00	4.54	-1.88
Q703	5.06	2.36	4.84
Q709	2.03	12.40	2.73
Q713	0.92	5.04	1.54
Q714	1.54	5.04	2.14

● Tuner/IF Circuit Diagram


FROM SYSTEM
PLL ENA
PLL DATA
PLL CLK
5.3V(G)
33V(G)
FROM PREM.
S/W VIDEO
(H.SYNC SEP)
12V(G)
TO SYSTEM
H.SYNC
FROM/TO SYSTEM
TU SECAM "H"
SECAM L-BAND
AFT CTL
DATA
CLK
NICAM RESET
9V(G)
TO HI-FI
TU A.(R)
TU A.(L)
AV A.(R)
AV A.(L)
TO Y/C
P7M03
TUNER VIDEO
AV VIDEO
TU701
TUNER
FROM KEY BOARD
P6602
P7601
PM701
P7M01
PM702
P7M02
FL705
40.4MHz
IC701
TDA4472B
Z701
OFWG3203
IC703
TDA9840
IC702
U2860B
T701
38.9MHz
Z702
TPS 5.5MB
Z703
TPS 5.74MB
Z704
SFT 5.5MA
Z705
SFT 5.74MA
X701
10.0MHz
TP701
SEP TP
Q701 KTC3199
Q702 KTC3199
Q703 KTA1267
Q704 KRC103M
Q705 KTC3199
Q709 KTC3197Y
Q713 KTC3199
Q714 KTC3199
SIF SIGNAL
AUDIO SIGNAL
IF SIGNAL
VIDEO SIGNAL
WAVEFORM
11
10
9
8
7
6
5
4
3
2
1
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
Q

Q701, Q702, Q703 are defective.
Video signal dosen't appear in EE Mode
Blue video signal is always appeared on screen
CH memory is failed in the AUTO search mode.

IC701 is defective.
· Tuning is failed.
· Audio base band signal is not output to pin ㉓.

T701 Mis-adjustment
Tuning is failed
AFC is failed.

VR701 is Mis-adjustment.
Picture quality can be weak

Q713, Q714 are defective.
The detected Video signal is not output.

VR702 is mis-adjustment.
· R-CH Audio level are lowed and highted more than L-CH Audio level.
· R-CH Audio is not separated from L-CH in dematrix is operating.

IC703 is defective
Audio signal is not separated L-CH from R-CH.

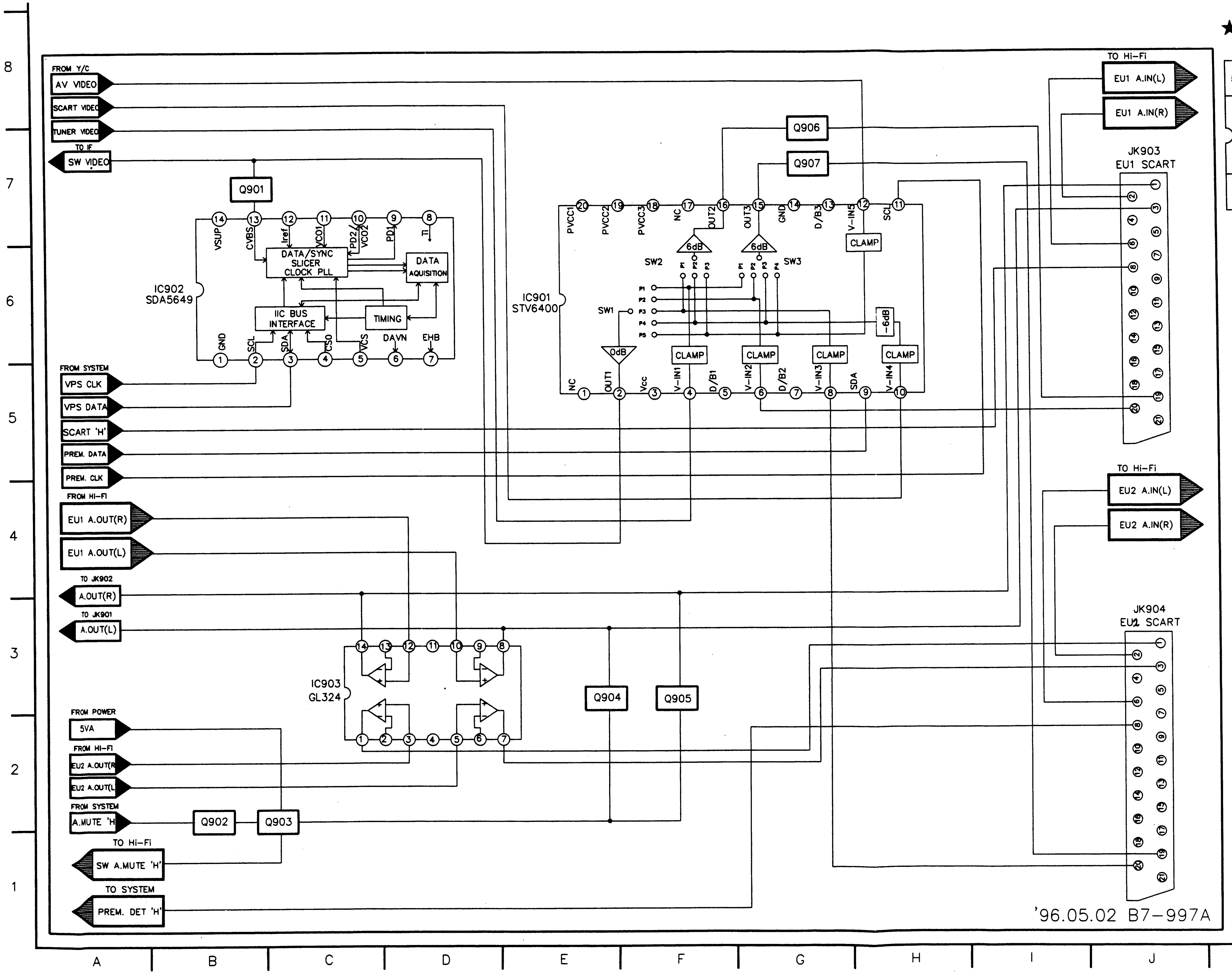
IC702 is defective.
FM demodulation is not.

'96.10.01 7-998B

LOCATION GUIDE

C701	B11
C702	C11
C703	C10
C704	D11
C705	D11
C706	E11
C707	E11
C708	D10
C709	E10
C710	F10
C711	C11
C712	B9
C713	C10
C714	C11
C715	I11
C716	I11
C717	L3
C718	O6
C719	G5
C720	I3
C721	J9
C722	J9
C723	J9
C724	L9
C725	M11
C726	N11
C727	J4
C728	J8
C729	K3
C731	J7
C732	L7
C733	H5
C734	I5
C735	J5
C736	J5
C737	K5
C739	N5
C741	J3
C742	J3
C743	O6
C744	J4
C745	G10
C746	H10
C750	N8
C751	N8
C752	O6
C753	O10
C754	O11
C755	O10
C756	P10
C759	I7
C760	I9
C763	M6
C764	L6
C765	J4
C748	H11
C790	B10
C791	B10
C792	C9
FL705	E9
IC701	L9
IC702	O4
IC703	I5
L701	D11
L702	E11
L703	D10
L704	F10
L705	I9
L706	J3
L709	K9
L710	M11
L713	I6
L714	M7
L715	N7
L718	L6
P6701	F12
P7601	G12
P7M01	G8
P7M02	G8
P7M03	A6
PM701	F8
PM702	F8
Q701	C11
Q702	B10
Q703	C10
Q704	D9
Q705	D9
Q709	K9
Q713	K7
Q714	N7
R701	B11
R702	B11
R703	B10
R704	D11
R705	E11
R706	E12
R707	B10
R708	B9
R709	C9
R710	C9
R711	C10
R712	D10
R713	D10
R714	I8
R715	O5
R723	J8
R724	K9
R725	K9
R726	K8
R727	K8
R729	K8
R731	K6
R732	K7
R734	M7
R735	N7
R736	O11
R737	O11
R738	N6
R739	M4
R740	O10
R741	O8
R742	O7
R745	O3
R746	O3
R748	I5
R749	K6
R750	K6
R752	K3
R753	O5
R754	N10
R756	J6
R757	K6
R758	G11
R759	G10
R760	H10
R761	H11
R762	O2
R763	O2
T701	O10
TP701	L5
TU701	D10
VR701	O8
VR702	O5
X701	J5
Z701	L9
Z702	O7
Z703	O6
Z704	N3
Z705	N5

6. Premiere Block Diagram


FROM Y/C
AV VIDEO
SCART VIDEO
TUNER VIDEO
TO IF
SW VIDEO
Q901
IC902
SDA5649
VSUP
CVBS
Iref
VCO1
PD2/VCO2
PD1
TI
DATA/SYNC SLICER CLOCK PLL
DATA AQUISITION
IIC BUS INTERFACE
TIMING
GND
SCL
SDA
CSO
VCS
DAVN
EHB
FROM SYSTEM
VPS CLK
VPS DATA
SCART 'H'
PREM. DATA
PREM. CLK
FROM HI-FI
EU1 A.OUT(R)
EU1 A.OUT(L)
TO JK902
A.OUT(R)
TO JK901
A.OUT(L)
IC903
GL324
Q904
Q905
FROM POWER
5VA
FROM HI-FI
EU2 A.OUT(R)
EU2 A.OUT(L)
FROM SYSTEM
A.MUTE 'H'
Q902
Q903
TO Hi-Fi
SW A.MUTE 'H'
TO SYSTEM
PREM. DET 'H'
Q906
Q907
IC901
STV6400
PVCC1
PVCC2
PVCC3
NC
OUT2
OUT3
GND
D/B3
V-IN5
SCL
6dB
SW2
SW3
SW1
P1
P2
P3
P4
P5
CLAMP
-6dB
0dB
OUT1
Vcc
V-IN1
D/B1
V-IN2
D/B2
V-IN3
SDA
V-IN4
TO Hi-Fi
EU1 A.IN(L)
EU1 A.IN(R)
JK903
EU1 SCART
TO Hi-Fi
EU2 A.IN(L)
EU2 A.IN(R)
JK904
EU2 SCART
'96.05.02 B7-997A
8
7
6
5
4
3
2
1
A
B
C
D
E
F
G
H
I
J

★ Premiere IC/TR Voltage Sheet

5.08	5.08	5.08	0.00	1.46	1.52	0.00	0.02	1.39	4.78
20					15				
1				5					10
0.00	1.11	5.08	1.74	0.02	1.38	0.00	1.38	4.78	2.04

IC901 (STV6400)

5.17	1.34	1.56	2.26	2.32	2.26	0.00
14				10		
1				5		
0.00	4.78	4.78	0.00	0.39	5.16	2.58

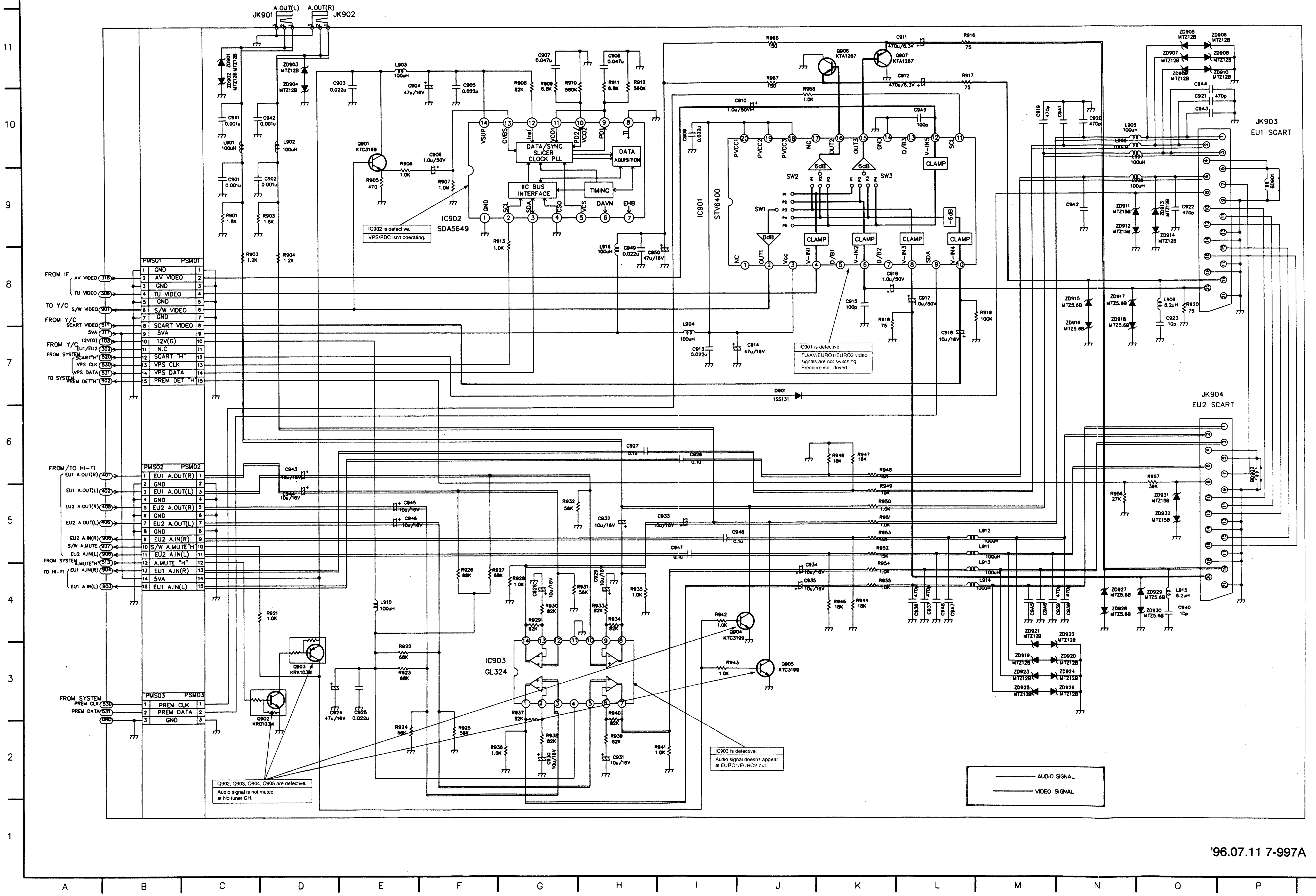
IC902 (SDA5649)

5.54	5.54	5.52	0.00	5.59	5.61	5.61
14				10		
1				5		
5.58	5.58	5.57	12.34	5.49	5.50	5.50

IC903 (GL324)

TR NO. \ Port	Emitter	Collector	Base
Q901	0.50	5.19	1.11
Q902	0.00	5.16	0.01
Q903	5.18	-0.57	5.16
Q904	0.00	0.00	-0.57
Q905	0.00	0.00	-0.57
Q906	2.17	0.00	1.46
Q907	2.23	0.00	1.52

• Premiere Circuit Diagram


JK901
A.OUT(L)
A.OUT(R)
JK902
11
10
9
8
7
6
5
4
3
2
1
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
Q
FROM IF
AV VIDEO 318
TU VIDEO 306
TO Y/C
S/W VIDEO 901
FROM Y/C
SCART VIDEO 511
5VA 317
12V(G) 103
FROM Y/C
EU1/EU2 302
FROM SYSTEM
SCART"H" 520
VPS CLK 530
VPS DATA 531
TO SYSTEM
PREM DET"H" 902
PMS01
PSM01
1 GND 1
2 AV VIDEO 2
3 GND 3
4 TU VIDEO 4
5 GND 5
6 S/W VIDEO 6
7 GND 7
8 SCART VIDEO 8
9 5VA 9
10 12V(G) 10
11 N.C 11
12 SCART "H" 12
13 VPS CLK 13
14 VPS DATA 14
15 PREM DET "H" 15
FROM/TO Hi-Fi
EU1 A.OUT(R) 401
EU1 A.OUT(L) 402
EU2 A.OUT(R) 405
EU2 A.OUT(L) 406
EU2 A.IN(R) 906
S/W A.MUTE 907
EU2 A.IN(L) 905
FROM SYSTEM
A.MUTE"H" 513
TO HI-FI
EU1 A.IN(R) 904
EU1 A.IN(L) 903
PMS02
PSM02
1 EU1 A.OUT(R) 1
2 GND 2
3 EU1 A.OUT(L) 3
4 GND 4
5 EU2 A.OUT(R) 5
6 GND 6
7 EU2 A.OUT(L) 7
8 GND 8
9 EU2 A.IN(R) 9
10 S/W A.MUTE"H" 10
11 EU2 A.IN(L) 11
12 A.MUTE "H" 12
13 EU1 A.IN(R) 13
14 5VA 14
15 EU1 A.IN(L) 15
FROM SYSTEM
PREM CLK 530
PREM DATA 531
GND
PMS03
PSM03
1 PREM CLK 1
2 PREM DATA 2
3 GND 3
IC902
SDA5649
VSUP
CVBS
Iref
VCO1
PD2
VCO2
PD1
TI
GND
SCL
SDA
CSO
VCS
DAVN
EHB
DATA/SYNC SLICER CLOCK PLL
DATA AQUISITION
IIC BUS INTERFACE
TIMING
IC901
STV6400
PVCC1
PVCC2
PVCC3
NC
OUT2
OUT3
GND
D/B3
V-IN5
SCL
OUT1
Vcc
V-IN1
D/B1
V-IN2
D/B2
V-IN3
SDA
V-IN4
SW1
SW2
SW3
6dB
0dB
-6dB
CLAMP
IC903
GL324
Q901
KTC3199
Q902
KRC103M
Q903
KRA103M
Q904
KTC3199
Q905
KTC3199
Q906
KTA1267
Q907
KTA1267
D901
1SS131
JK903
EU1 SCART
JK904
EU2 SCART
BD901
BD902
ZD901
ZD902
MTZ12B
ZD903
MTZ12B
ZD904
MTZ12B
ZD905
ZD906
ZD907
ZD908
ZD909
ZD910
ZD911
ZD912
ZD913
ZD914
MTZ15B
ZD915
ZD916
ZD917
ZD918
MTZ5.6B
ZD919
ZD920
ZD921
ZD922
ZD923
ZD924
ZD925
ZD926
ZD927
ZD928
ZD929
ZD930
ZD931
ZD932
L901 100uH
L902 100uH
L903 100uH
L904 100uH
L905 100uH
L906 100uH
L907 100uH
L908 100uH
L909 8.2uH
L910 100uH
L911 100uH
L912 100uH
L913 100uH
L914 100uH
L915 8.2uH
L916 100uH
C901 0.001u
C902 0.001u
C903 0.022u
C904 47u/16V
C905 0.022u
C906 1.0u/50V
C907 0.047u
C908 0.047u
C909 0.022u
C910 1.0u/50V
C911 470u/6.3V
C912 470u/6.3V
C913 0.022u
C914 47u/16V
C915 100p
C916 1.0u/50V
C917 1.0u/50V
C918 10u/16V
C919 470p
C920 470p
C921 470p
C922 470p
C923 10p
C924 47u/16V
C925 0.022u
C926 0.1u
C927 0.1u
C931 10u/16V
C932 10u/16V
C933 10u/16V
C934 10u/16V
C935 10u/16V
C940 10p
C941 0.001u
C942 0.001u
C943 10u/16V
C944 10u/16V
C945 10u/16V
C946 10u/16V
C947 0.1u
C948 0.1u
C949 0.022u
C950 47u/16V
C9A9 100p
R901 1.8K
R902 1.2K
R903 1.8K
R904 1.2K
R905 470
R906 1.0K
R907 1.0M
R908 82K
R909 6.8K
R910 560K
R911 6.8K
R912 560K
R913 1.0K
R916 75
R917 75
R918 75
R919 100K
R920 75
R921 1.0K
R922 68K
R923 68K
R924 56K
R925 56K
R926 68K
R927 68K
R928 1.0K
R929 82K
R930 82K
R931 56K
R932 56K
R933 82K
R934 82K
R935 1.0K
R936 1.0K
R937 82K
R938 82K
R939 82K
R940 82K
R941 1.0K
R942 1.0K
R943 1.0K
R944 18K
R945 18K
R946 18K
R947 18K
R948 15K
R949 15K
R950 1.0K
R951 1.0K
R952 15K
R953 15K
R954 1.0K
R955 1.0K
R956 27K
R957 39K
R958 1.0K
R967 150
R968 150
AUDIO SIGNAL
VIDEO SIGNAL

IC902 is defective.
VPS/PDC isn't operating.

IC901 is defective
TU/AV/EURO1/EURO2 video signals are not switching
Premiere isn't drived.

IC903 is defective.
Audio signal doesn't appear at EURO1/EURO2 out.

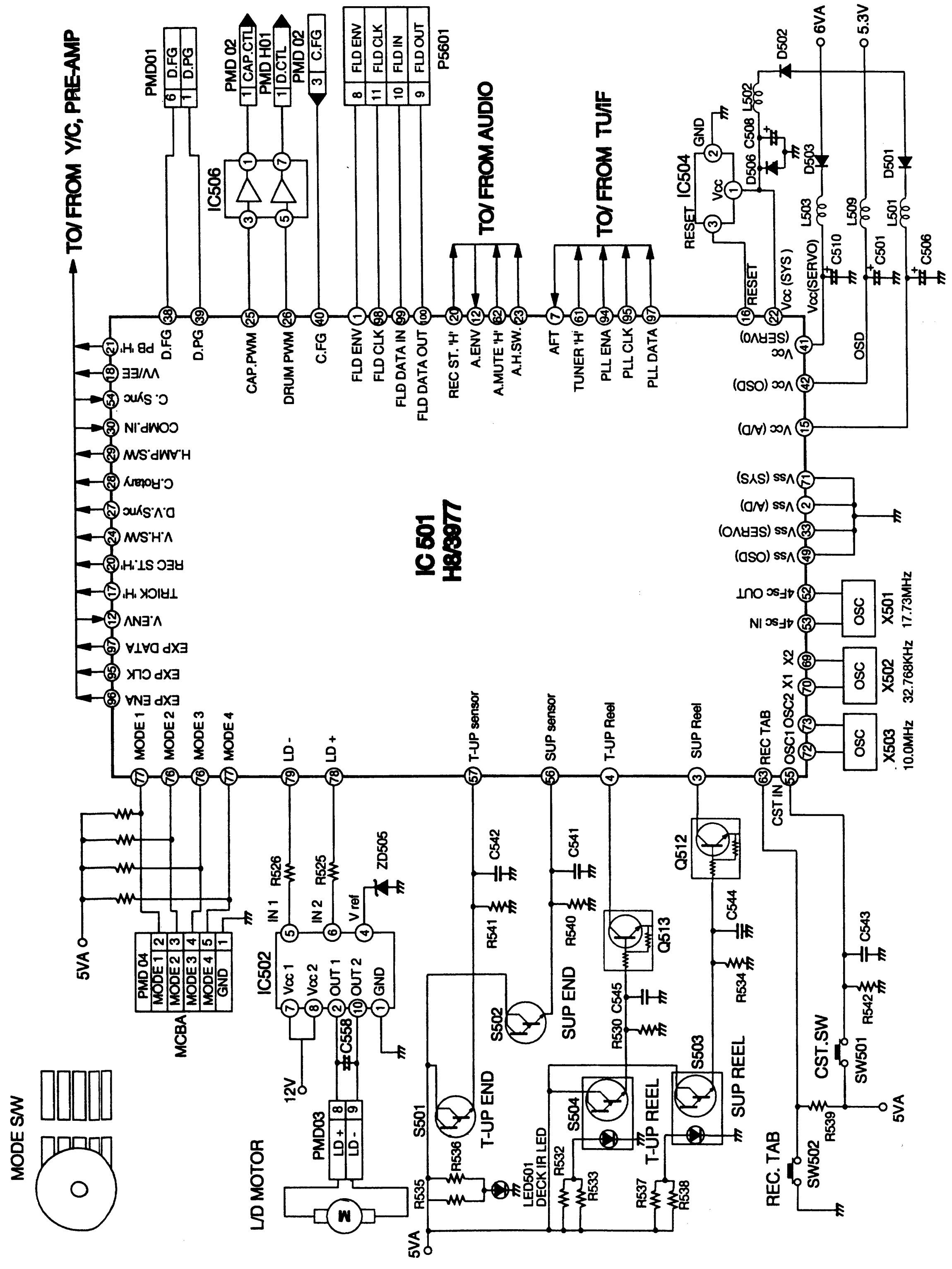
Q902, Q903, Q904, Q905 are defective.
Audio signal is not muted at No tuner CH.

'96.07.11 7-997A

LOCATION GUIDE

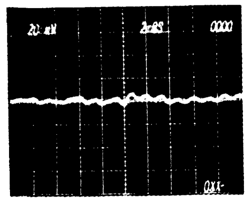
BD901	P9	Q902	C2
BD902	P6	Q903	D3
C901	C9	Q904	I4
C902	D9	Q905	J3
C903	D11	Q906	K11
C904	E10	Q907	L11
C905	F11	R901	C9
C906	F10	R902	C8
C907	G11	R903	D9
C908	H11	R904	D8
C909	I10	R905	E9
C910	I10	R906	E10
C911	L11	R907	F9
C912	L11	R908	G11
C913	I7	R909	G11
C914	J7	R910	G11
C915	K8	R911	H11
C916	K8	R912	H11
C917	L8	R913	F9
C918	L7	R916	L11
C919	M10	R917	L11
C920	N10	R918	K8
C921	O10	R919	M8
C922	O9	R920	O8
C923	O8	R921	D4
C924	D3	R922	E3
C925	E3	R923	E3
C926	I6	R924	E2
C927	H6	R925	F2
C928	G4	R926	F4
C929	H4	R927	F4
C930	G2	R928	G4
C931	H2	R929	G4
C932	H5	R930	G4
C933	I5	R931	G4
C934	J4	R932	G5
C935	J4	R933	H4
C936	L4	R934	H4
C937	L4	R935	H4
C938	N4	R936	F2
C939	N4	R937	G3
C940	O4	R938	G2
C941	C10	R939	H2
C942	D10	R940	H3
C943	D6	R941	H2
C944	D5	R942	I4
C945	E5	R943	I3
C946	E5	R944	K4
C947	I5	R945	K4
C948	I5	R946	K6
C949	H8	R947	K6
C950	H8	R948	K6
C9A1	N10	R949	K5
C9A2	N9	R950	K5
C9A3	O10	R951	K5
C9A4	O10	R952	K5
C9A5	M4	R953	K5
C9A6	M4	R954	K4
C9A7	L4	R955	K4
C9A8	L4	R956	N5
C9A9	L10	R957	O6
D901	J7	R958	J10
GND	B2	R967	J11
IC901	I9	R968	J11
IC902	F9	ZD901	C11
IC903	F3	ZD902	C11
JK901	C11	ZD903	D11
JK902	D11	ZD904	D11
JK903	P10	ZD905	O11
JK904	O7	ZD906	O11
L901	C10	ZD907	O11
L902	D10	ZD908	O11
L903	E11	ZD909	O11
L904	I7	ZD910	O11
L905	N10	ZD911	N9
L906	N10	ZD912	N9
L907	N10	ZD913	O9
L908	N9	ZD914	O9
L909	O8	ZD915	N8
L910	E4	ZD916	N7
L911	M5	ZD917	N8
L912	M5	ZD918	N8
L913	M4	ZD919	M3
L914	M4	ZD920	N3
L915	O4	ZD921	M4
L916	H8	ZD922	N4
PMS01	B8	ZD923	M3
PMS02	B6	ZD924	N3
PMS03	B3	ZD925	M3
PSM01	C8	ZD926	N3
PSM02	C6	ZD927	N4
PSM03	C3	ZD928	N4
Q901	E10	ZD929	O4
		ZD930	O4
		ZD931	O5
		ZD932	O5

6. Syscon/Servo Block Diagram


TO/ FROM Y/C, PRE-AMP
TO/ FROM AUDIO
TO/ FROM TU/IF
IC 501
H8/3977
IC506
IC504
IC502
PMD01
D.FG
D.PG
PMD 02
CAP.CTL
PMD H01
D.CTL
PMD 02
C.FG
FLD ENV
FLD CLK
FLD IN
FLD OUT
P5601
6VA
5.3V
D502
D503
D501
D506
L502
L503
L509
L501
C508
C510
C501
C506
RESET
Vcc
GND
PB 'H'
WEE
C. Sync
COMP.IN
H.AMP.SW
C.Rotary
D.V.Sync
V.H.SW
REC ST.'H'
TRICK 'H'
V.ENV
EXP DATA
EXP CLK
EXP ENA
D.FG
D.PG
CAP.PWM
DRUM PWM
C.FG
FLD ENV
FLD CLK
FLD DATA IN
FLD DATA OUT
REC ST. 'H'
A.ENV
A.MUTE 'H'
A.H.SW.
AFT
TUNER 'H'
PLL ENA
PLL CLK
PLL DATA
RESET
Vcc (SYS)
Vcc(SERVO)
Vcc (SERVO)
Vcc (OSD)
Vcc (A/D)
OSD
Vss (SYS)
Vss (A/D)
Vss (SERVO)
Vss (OSD)
4Fsc OUT
4Fsc IN
OSC
X501 17.73MHz
X502 32.768KHz
X503 10.0MHz
X1
X2
OSC1
OSC2
REC TAB
CST IN
MODE 1
MODE 2
MODE 3
MODE 4
LD -
LD +
T-UP sensor
SUP sensor
T-UP Reel
SUP Reel
5VA
R526
R525
ZD505
IN 1
IN 2
Vref
Vcc 1
Vcc 2
OUT 1
OUT 2
GND
C558
12V
PMD03
LD +
LD -
L/D MOTOR
M
PMD 04
MODE 1
MODE 2
MODE 3
MODE 4
GND
MCBA
MODE S/W
C542
C541
R541
R540
S502
SUP END
S501
T-UP END
R535
R536
LED501 DECK IR LED
R532
R533
R530
C545
S504
T-UP REEL
Q513
Q512
C544
R534
S503
SUP REEL
R537
R538
C543
R542
CST.SW
SW501
R539
REC. TAB
SW502
5VA

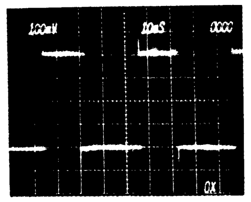
★ Servo Oscilloscope Waveform

①



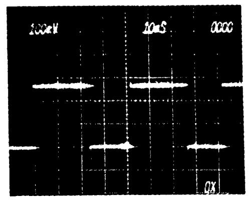
IC505 PIN ①
Capstan Control
(20mv/2msec)

②



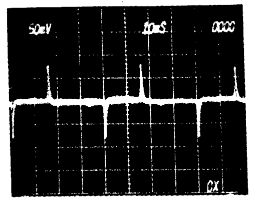
IC501 PIN ㉜
Record Control (-)
(100mv/10msec)

③



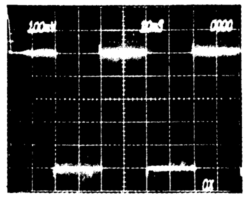
IC501 PIN ㉛
Record Control (+)
(100mv/10msec)

④



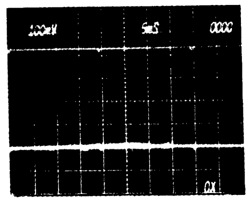
IC501 PIN ㊲
Playback Control Pulse
(50mv/10msec)

⑤



IC501 PIN ㉔
Video Head Switching
Pulse(100mv/10msec)

⑥



IC501 PIN (54) C-SYNC
Input terminal
(100mv/5msec)

PB(REC)

IC502 (GL7445)

1	2	3	4	5	6	7	8	9	10
0.0 (0.9)	0.50 (0.50)	0.76 (0.75)	0.45 (0.43)	1.74 (1.73)	1.74 (1.73)	12.13 (12.16)	12.14 (12.16)	0.75 (0.76)	0.48 (0.49)

★ Servo/Syscon IC/TR Voltage Sheet

IC501 (H8/3977)

PB(REC)

Pin	PB(REC)	Pin	PB(REC)	Pin	PB(REC)	Pin	PB(REC)
1	3.90 (3.90)	26	5.0 (5.0)	51	1.07 (1.07)	76	0.00 (0.00)
2	0.00 (0.00)	27	0.05 (0.06)	52	2.39 (2.38)	77	4.98 (4.98)
3	5.0 (5.0)	28	5.10 (5.10)	53	2.39 (2.38)	78	5.07 (5.06)
4	5.0 (5.0)	29	0.00 (0.05)	54	4.0 (4.0)	79	5.08 (5.06)
5	4.98 (4.98)	30	0.02 (0.02)	55	0.00 (0.01)	80	5.01 (4.98)
6	0.00 (0.00)	31	5.1 (5.1)	56	0.55 (0.37)	81	1.21 (0.01)
7	2.64 (2.63)	32	5.1 (5.1)	57	0.55 (0.43)	82	1.21 (0.01)
8	0.00 (0.00)	33	0.00 (0.00)	58	0.02 (0.02)	83	5.00 (4.99)
9	1.78 (0.00)	34	2.57 (2.57)	59	2.80 (2.78)	84	1.19 (1.17)
10	1.82 (0.01)	35	2.64 (2.63)	60	0.02 (0.02)	85	0.03 (0.03)
11	5.23 (5.23)	36	2.63 (2.63)	61	0.0 (0.0)	86	0.03 (0.03)
12	4.41 (0.00)	37	2.63 (2.63)	62	0.0 (0.0)	87	4.15 (4.15)
13	3.13 (2.61)	38	2.23 (2.23)	63	0.0 (4.97)	88	5.10 (5.08)
14	1.97 (1.96)	39	4.33 (4.32)	64	0.01 (0.01)	89	4.12 (4.12)
15	5.23 (5.24)	40	2.67 (2.67)	65	2.51 (2.50)	90	4.7 (4.7)
16	5.16 (5.14)	41	5.32 (5.33)	66	5.15 (5.13)	91	4.7 (4.7)
17	0.04 (0.04)	42	5.07 (5.08)	67	3.44 (3.10)	92	4.97 (4.97)
18	5.13 (0.04)	43	1.4 (1.4)	68	0.00 (0.00)	93	4.97 (4.97)
19	0.03 (0.04)	44	1.35 (1.36)	69	1.44 (1.44)	94	0.18 (0.13)
20	0.04 (5.09)	45	1.4 (1.4)	70	0.68 (0.69)	95	0.13 (0.13)
21	5.13 (0.04)	46	3.43 (3.44)	71	0.00 (0.00)	96	0.10 (0.10)
22	5.16 (5.15)	47	3.40 (3.41)	72	3 (3)	97	0.12 (0.14)
23	5.10 (5.10)	48	1.64 (1.64)	73	4 (4)	98	5.09 (5.08)
24	5.10 (5.10)	49	0.00 (0.00)	74	4.98 (4.98)	99	4.99 (4.98)
25	5.0 (5.0)	50	1.17 (1.17)	75	4.99 (4.98)	100	5.0 (5.0)

PB(REC)

IC503 (AT24C16)

8	7	6	5
4.98 (4.98)	0.0 (0.0)	4.7 (4.7)	4.67 (4.7)

1	2	3	4
0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)

PB(REC)

IC505 (GL358)

8	7	6	5
5.33 (5.32)	1.37 (1.35)	2.20 (2.20)	2.21 (2.20)

1	2	3	4
2.80 (2.79)	2.80 (2.80)	2.80 (2.79)	0.0 (0.0)

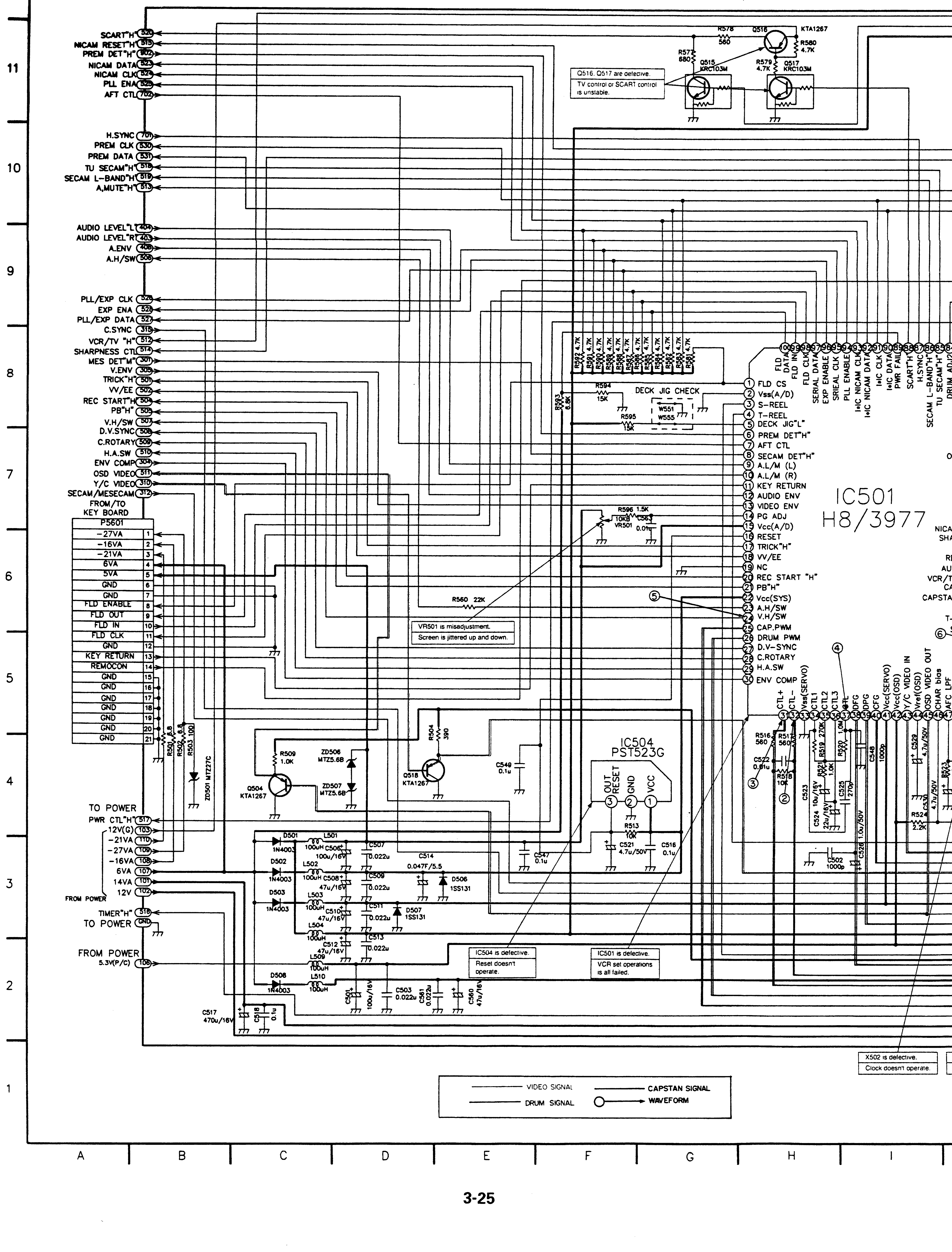
PB(REC)

IC504 (PST523G)

1	2	3
5.18 (5.15)	0.0 (0.0)	5.17 (5.14)

Port / TR NO.	Emitter		Collector		Base	
	PB	REC	PB	REC	PB	REC
Q504	2.92	3.03	0.0	0.0	2.29	2.39
Q508	0.00	0.00	0.10	0.10	0.02	0.02
Q509	0.00	0.00	5.05	5.05	0.01	0.00
Q510	0.15	0.15	1.6	1.6	0.13	0.10
Q511	5.08	5.08	0.31	0.10	5.05	5.05
Q512	0.00	0.00	5.0	5.0	4.9	4.9
Q513	0.00	0.00	5.0	5.0	4.9	4.9
Q515	0.00	0.00	12.52	12.52	0.01	0.01
Q516	12.53	12.53	12.53	12.51	11.79	11.79
Q517	0.00	0.00	0.00	0.04	5.10	5.08
Q518	2.46	2.58	0.00	0.01	1.79	1.92

● Syscon/Servo Circuit Diagram



SCART"H" 520
NICAM RESET"H" 515
PREM DET"H" 802
NICAM DATA 523
NICAM CLK 524
PLL ENA 525
AFT CTL 702
H.SYNC 701
PREM CLK 530
PREM DATA 531
TU SECAM"H" 518
SECAM L-BAND"H" 519
A.MUTE"H" 513
AUDIO LEVEL"L" 404
AUDIO LEVEL"R" 403
A.ENV 406
A.H/SW 506
PLL/EXP CLK 526
EXP ENA 528
PLL/EXP DATA 527
C.SYNC 315
VCR/TV "H" 512
SHARPNESS CTL 514
MES DET"M" 301
V.ENV 305
TRICK"H" 501
VV/EE 502
REC START"H" 504
PB"H" 503
V.H/SW 507
D.V.SYNC 508
C.ROTARY 509
H.A.SW 510
ENV COMP 304
OSD VIDEO 511
Y/C VIDEO 310
SECAM/MESECAM 312
FROM/TO KEY BOARD
P5601
-27VA 1
-16VA 2
-21VA 3
6VA 4
5VA 5
GND 6
GND 7
FLD ENABLE 8
FLD OUT 9
FLD IN 10
FLD CLK 11
GND 12
KEY RETURN 13
REMOCON 14
GND 15
GND 16
GND 17
GND 18
GND 19
GND 20
GND 21
TO POWER
PWR CTL"H" 517
12V(G) 103
-21VA 110
-27VA 109
-16VA 108
6VA 107
14VA 101
12V 102
FROM POWER
TIMER"H" 516
TO POWER GND
FROM POWER
5.3V(P/C) 106
R578 560
Q516 KTA1267
R580 4.7K
R577 680
Q515 KRC103M
R579 4.7K
Q517 KRC103M
R592 4.7K
R591 4.7K
R590 4.7K
R589 4.7K
R588 4.7K
R587 4.7K
R586 4.7K
R585 4.7K
R584 4.7K
R583 4.7K
R582 4.7K
R581 4.7K
R593 6.8K
R594 15K
R595 15K
DECK JIG CHECK
W551
W555
R596 1.5K
10KB
VR501
C563 0.01u
R560 22K
IC501
H8/3977
1 FLD CS
2 Vss(A/D)
3 S-REEL
4 T-REEL
5 DECK JIG"L"
6 PREM DET"H"
7 AFT CTL
8 SECAM DET"H"
9 A.L/M (L)
10 A.L/M (R)
11 KEY RETURN
12 AUDIO ENV
13 VIDEO ENV
14 PG ADJ
15 Vcc(A/D)
16 RESET
17 TRICK"H"
18 VV/EE
19 NC
20 REC START "H"
21 PB"H"
22 Vcc(SYS)
23 A.H/SW
24 V.H/SW
25 CAP.PWM
26 DRUM PWM
27 D.V-SYNC
28 C.ROTARY
29 H.A.SW
30 ENV COMP
31 CTL+
32 CTL-
33 Vss(SERVO)
34 CTL1
35 CTL2
36 CTL3
37 CTL
38 DFG
39 DPG
40 CFG
41 Vcc(SERVO)
42 Vcc(OSD)
43 Y/C VIDEO IN
44 Vref(OSD)
45 OSD VIDEO OUT
46 CHAR bias
47 AFC LPF
100 FLD DATA
99 FLD IN
98 FLD CLK
97 SERIAL DATA
96 EXP ENABLE
95 SRIEAL CLK
94 PLL ENABLE
93 I²C NICAM CLK
92 I²C NICAM DATA
91 I²C CLK
90 I²C DATA
89 PWR FAIL
88 SCART"H"
87 H.SYNC
86 SECAM L-BAND"H"
85 TU SECAM"H"
DRUM ADJ
NICA
SHA
AU
VCR/T
CA
CAPSTA
R516 560
R517 560
C522 0.01u
R518 10K
R519 270K
R521 1.0K
R520 1.0M
C523
C524 10u/16V
22u/16V
C525 270p
C548 1000p
C529 4.7u/50V
C530 4.7u/50V
R523
R524 2.2K
C526 1.0u/50V
C502 1000p
R501 6.8
R502 6.8
R503 100
ZD501 MTZ27C
R509 1.0K
Q504 KTA1267
ZD506 MTZ5.6B
ZD507 MTZ5.6B
R504 390
Q518 KTA1267
C549 0.1u
IC504
PST523G
OUT RESET
GND
VCC
R513 10K
C521 4.7u/50V
C516 0.1u
C547 0.1u
D501 1N4003
L501 100uH
C506 100u/16V
C507 0.022u
D502 1N4003
L502 100uH
C508 47u/16V
C509 0.022u
C514 0.047F/5.5
D506 1SS131
D503 1N4003
L503 100uH
C510 47u/16V
C511 0.022u
D507 1SS131
L504 100uH
C512 47u/16V
C513 0.022u
L509 100uH
D508 1N4003
L510 100uH
C501 100u/16V
C503 0.022u
C561 0.022u
C560 47u/16V
C517 470u/16V
C518 0.1u
④
⑤
⑥
③
②
A
B
C
D
E
F
G
H
I
1
2
3
4
5
6
7
8
9
10
11

Q516. Q517 are defective.
TV control or SCART control is unstable.

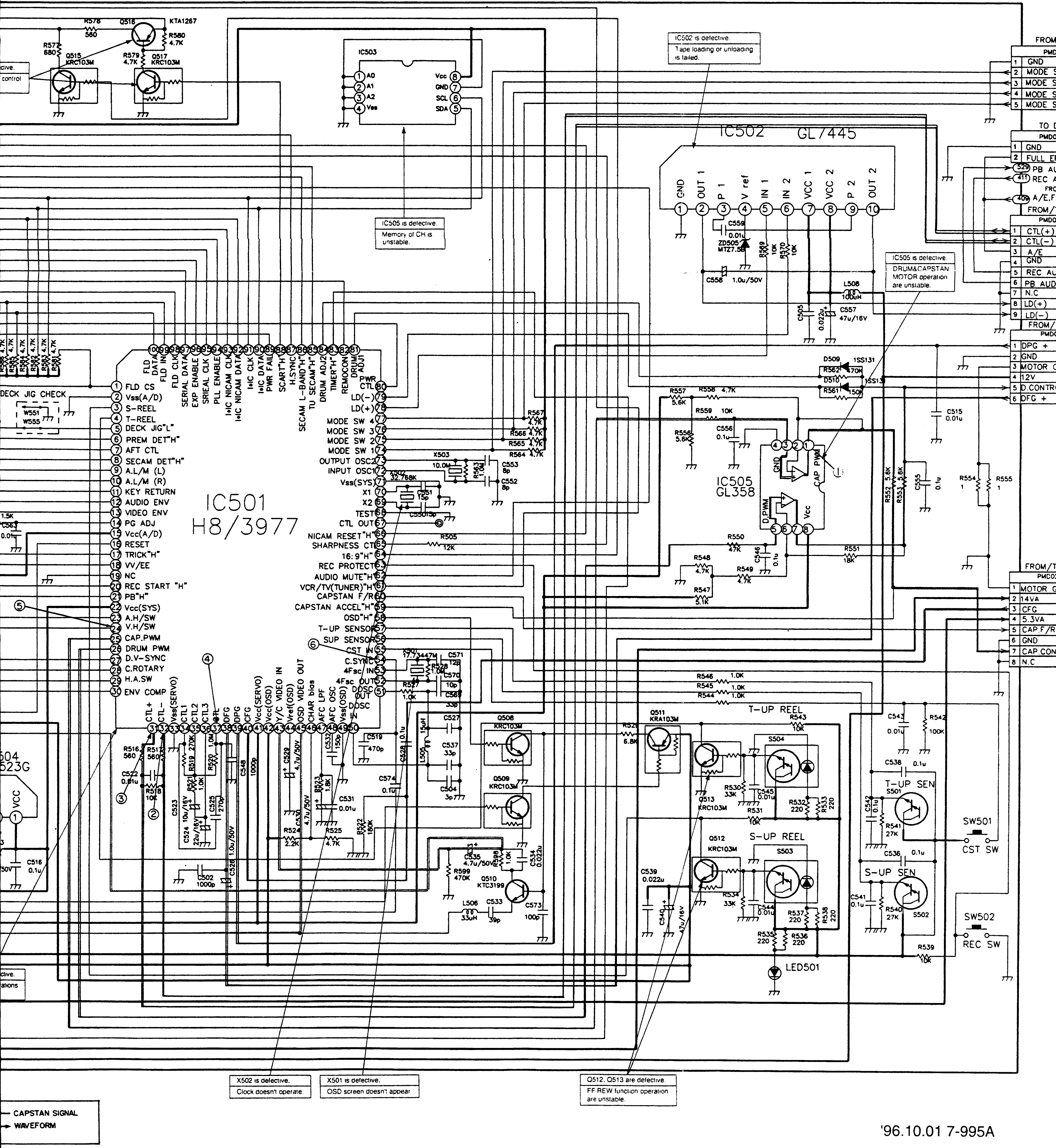
VR501 is misadjustment.
Screen is jittered up and down.

IC504 is defective.
Reset doesn't operate.

IC501 is defective.
VCR set operations is all failed.

X502 is defective.
Clock doesn't operate.

VIDEO SIGNAL
DRUM SIGNAL
CAPSTAN SIGNAL
WAVEFORM


IC501
H8/3977
IC502 GL/445
IC503
IC505
GL358
Q515 KRC103M
Q516 KTA1267
Q517 KRC103M
Q508 KRC103M
Q509 KRC103M
Q510 KTC3199
Q511 KRA103M
Q512 KRC103M
Q513 KRC103M
X501 17.734474M
X502 32.768K
X503 10.0M
ZD505 MTZ7.5B
D509 1SS131
D510 1SS131
L505 15uH
L506 33uH
L508 100uH
T-UP REEL
S-UP REEL
T-UP SEN
S-UP SEN
S501
S502
S503
S504
SW501 CST SW
SW502 REC SW
LED501
DECK JIG CHECK
W551
W555
FROM
TO
GND
MODE S
FULL E
PB AU
REC A
A/E,F
CTL(+)
CTL(-)
A/E
REC AU
PB AUD
N.C
LD(+)
LD(-)
DPG +
MOTOR C
12V
D.CONTR
DFG +
MOTOR G
14VA
CFG
5.3VA
CAP.F/R
CAP.CON
FLD CS
Vss(A/D)
S-REEL
T-REEL
DECK JIG"L"
PREM DET"H"
AFT CTL
SECAM DET"H"
A.L/M (L)
A.L/M (R)
KEY RETURN
AUDIO ENV
VIDEO ENV
PG ADJ
Vcc(A/D)
RESET
TRICK"H"
VV/EE
NC
REC START "H"
PB"H"
Vcc(SYS)
A.H/SW
V.H/SW
CAP.PWM
DRUM PWM
D.V-SYNC
C.ROTARY
H.A.SW
ENV COMP
PWR CTL
LD(-)
LD(+)
MODE SW 4
MODE SW 3
MODE SW 2
MODE SW 1
OUTPUT OSC2
INPUT OSC1
Vss(SYS)
X1
X2
TEST
CTL OUT
NICAM RESET"H"
SHARPNESS CTL
16:9"H"
REC PROTECT
AUDIO MUTE"H"
VCR/TV(TUNER)"H"
CAPSTAN F/R
CAPSTAN ACCEL"H"
OSD"H"
T-UP SENSOR
SUP SENSOR
CST IN
C.SYNC
4Fsc IN
4Fsc OUT
DOSC OUT
DOSC IN
FLD DATA
FLD INT
FLD CLK
SERIAL DATA
EXP ENABLE
SRIEAL CLK
PLL ENABLE
I²C NICAM CLK
I²C NICAM DATA
I²C CLK
I²C DATA
PWR FAIL
SCART"H"
H.SYNC
SECAM L-BAND"H"
TU SECAM"H"
DRUM ADJ2
TIMER"H"
REMOCON
DRUM ADJ1
CTL+
CTL-
Vss(SERVO)
CTL1
CTL2
CTL3
DFG
DPG
CFG
Vcc(SERVO)
Vcc(OSD)
Y/C VIDEO IN
Vref(OSD)
OSD VIDEO OUT
CHAR bias
AFC LPF
AFC OSC
Vss(OSD)
A0
A1
A2
Vss
Vcc
GND
SCL
SDA
OUT 1
P 1
V ref
IN 1
IN 2
VCC 1
VCC 2
P 2
OUT 2
CAP PWM
D.PWM
CAPSTAN SIGNAL
WAVEFORM

IC502 is defective.
Tape loading or unloading is failed.

IC505 is defective.
Memory of CH is unstable.

IC505 is defective.
DRUM&CAPSTAN MOTOR operation are unstable.

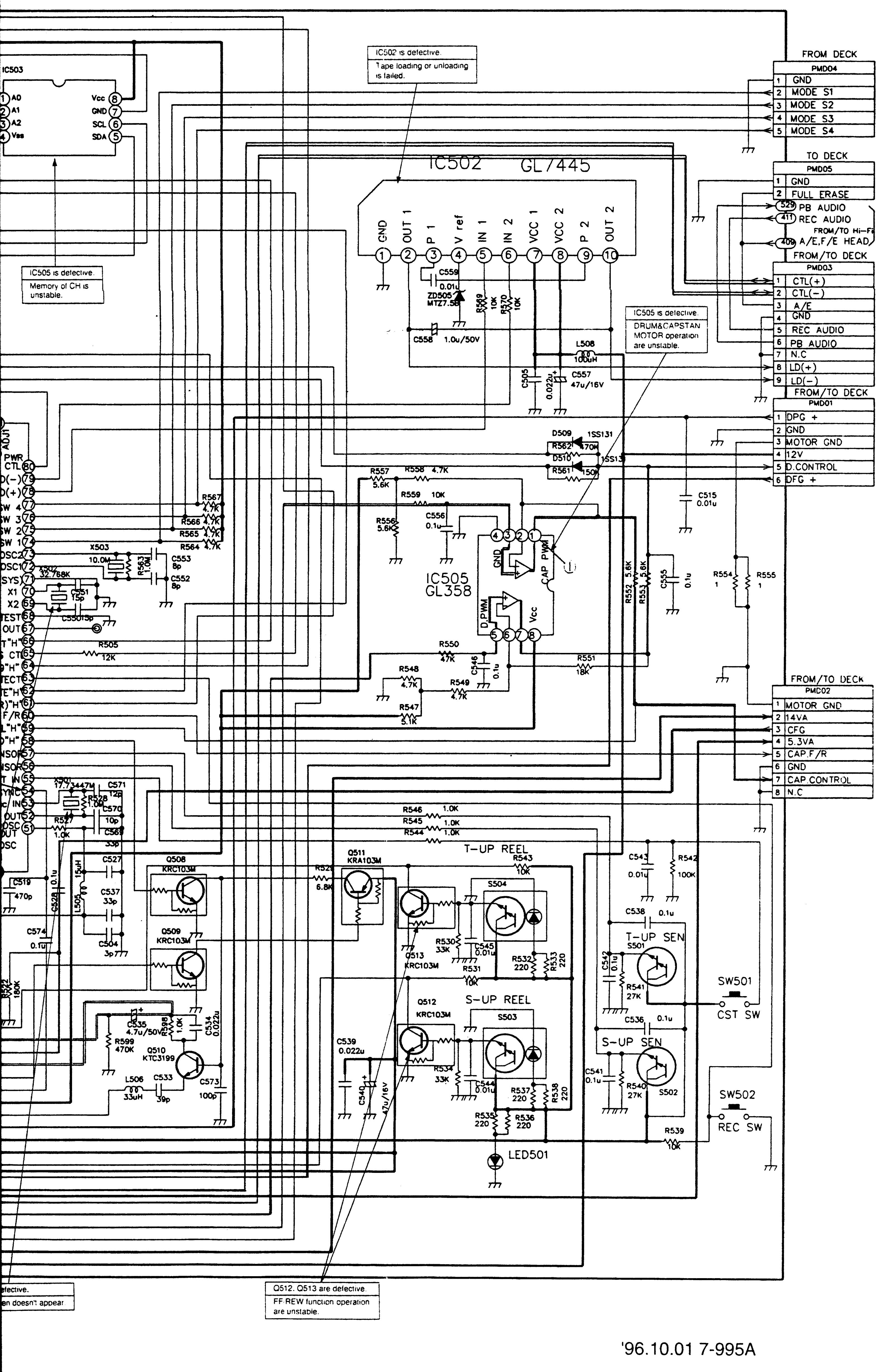
X502 is defective.
Clock doesn't operate.

X501 is defective.
OSD screen doesn't appear

Q512, Q513 are defective.
FF REW function operation are unstable.

'96.10.01 7-995A

G	H	I	J	K	L	M	N	O	P


IC503
A0
A1
A2
Vss
Vcc
GND
SCL
SDA
IC502 GL7445
GND
OUT 1
P 1
V ref
IN 1
IN 2
VCC 1
VCC 2
P 2
OUT 2
ZD505 MTZ7.5B
C559 0.01u
C558 1.0u/50V
R569 10K
R570 10K
L508 100uH
C505 0.022u
C557 47u/16V
D509 1SS131
D510 1SS131
R562 470K
R561 150K
R557 5.6K
R558 4.7K
R559 10K
R556 5.6K
C556 0.1u
IC505 GL358
D.PWM
CAP PWM
Vcc
R550 47K
R548 4.7K
R549 4.7K
R547 5.1K
C546 0.1u
R551 18K
R552 5.6K
R553 5.6K
C555 0.1u
C515 0.01u
R554 1
R555 1
FROM DECK
PMD04
GND
MODE S1
MODE S2
MODE S3
MODE S4
TO DECK
PMD05
GND
FULL ERASE
PB AUDIO
REC AUDIO
FROM/TO Hi-Fi
A/E.F/E HEAD
FROM/TO DECK
PMD03
CTL(+)
CTL(-)
A/E
GND
REC AUDIO
PB AUDIO
N.C
LD(+)
LD(-)
FROM/TO DECK
PMD01
DPG +
GND
MOTOR GND
12V
D.CONTROL
DFG +
FROM/TO DECK
PMD02
MOTOR GND
14VA
CFG
5.3VA
CAP.F/R
GND
CAP.CONTROL
N.C
X503 10.0M
X502 32.768K
X501 17.734475M
R563 1.0M
C553 8p
C552 8p
C551 15p
C550 15p
R567 4.7K
R566 4.7K
R565 4.7K
R564 4.7K
R505 12K
R528 1.0K
R527 1.0K
C571 12p
C570 10p
C569 33p
R546 1.0K
R545 1.0K
R544 1.0K
T-UP REEL
R543 10K
Q511 KRA103M
R529 6.8K
Q508 KRC103M
Q509 KRC103M
Q513 KRC103M
Q512 KRC103M
Q510 KTC3199
S504
S503
R530 33K
R534 33K
C545 0.01u
C544 0.01u
R531 10K
R532 220
R533 220
R537 220
R538 220
R535 220
R536 220
S-UP REEL
LED501
C539 0.022u
C540 47u/16V
C543 0.01u
R542 100K
C538 0.1u
T-UP SEN
S501
C542 0.1u
R541 27K
C536 0.1u
S-UP SEN
S502
C541 0.1u
R540 27K
SW501
CST SW
SW502
REC SW
R539 10K
C527
C537 33p
C504 3p
L505 15uH
C519 470p
C528 0.1u
C574 0.1u
R582 180K
C535 4.7u/50V
R598 1.0K
C534 0.022u
R599 470K
L506 33uH
C533 39p
C573 100p
ADJ1
PWR
CTL
D(-)
D(+)
SW 4
SW 3
SW 2
SW 1
OSC2
OSC1
SYS
X1
X2
TEST
OUT
S CTL
TECT
F/R
N IN
SYNC
OUT
OSC
OUT
OSC
80
79
78
77
76
75
74
73
72
71
70
69
68
67
66
65
64
63
62
61
60
59
58
57
56
55
54
53
52
51

IC502 is defective.
Tape loading or unloading is failed.

IC505 is defective.
Memory of CH is unstable.

IC505 is defective.
DRUM&CAPSTAN MOTOR operation are unstable.

efective.
en doesn't appear

Q512, Q513 are defective.
FF REW function operation are unstable.

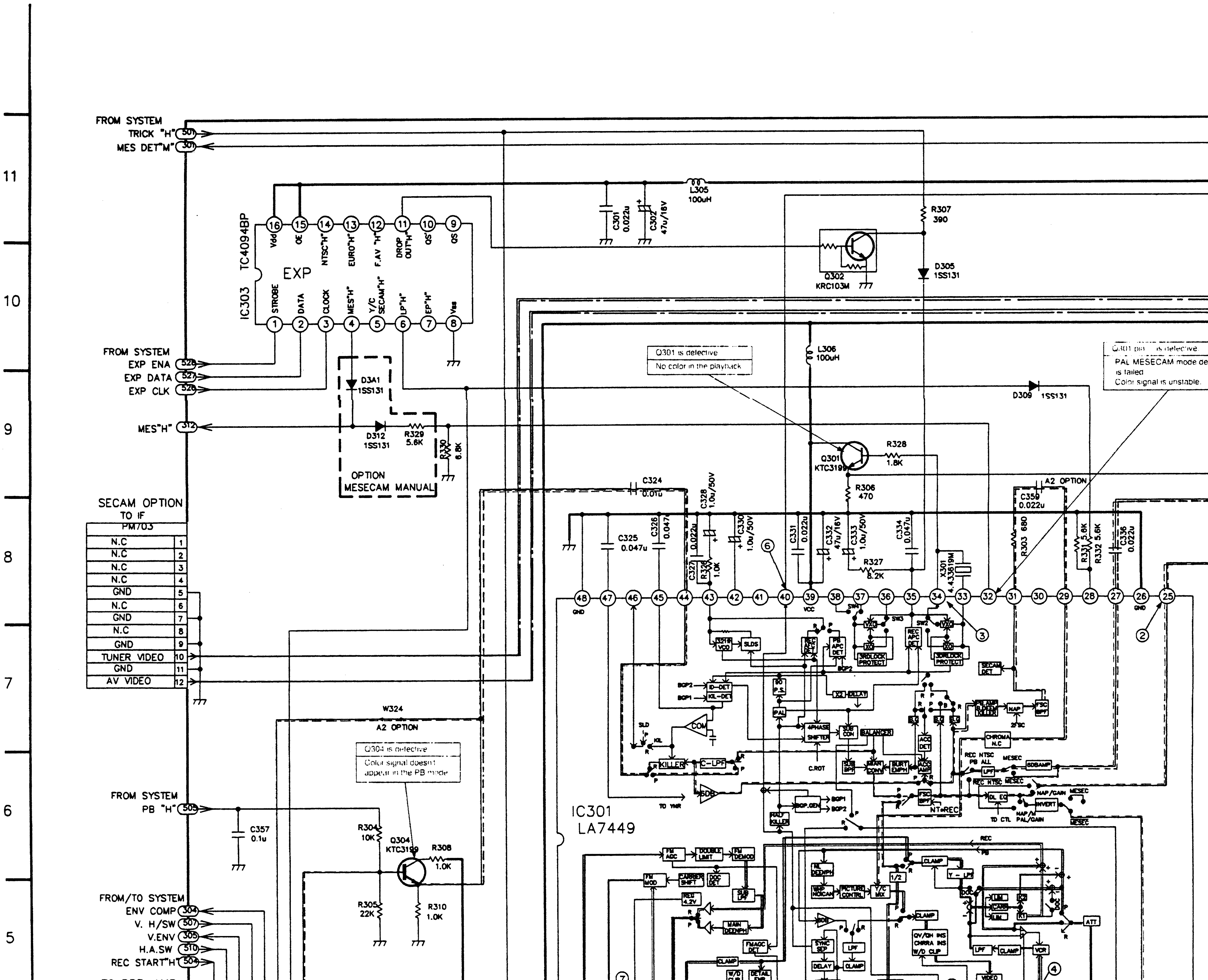
'96.10.01 7-995A

J K L M N O P Q

LOCATION GUIDE

C501	D2	R502	B4
C502	H3	R503	B4
C503	D2	R504	D4
C504	K4	R505	K7
C505	N9	R509	C4
C506	C3	R513	F4
C507	D3	R516	H4
C508	C3	R517	H4
C509	D3	R518	H4
C510	C3	R519	H4
C511	D3	R520	I4
C512	C2	R521	H4
C513	D2	R522	J4
C514	D3	R523	J4
C515	O8	R524	I4
C516	G3	R525	J4
C517	B2	R527	J5
C518	C2	R528	K5
C519	J5	R529	L5
C521	F3	R530	M4
C522	H4	R531	N4
C523	H4	R532	N4
C524	H4	R533	N4
C525	I4	R534	M3
C526	I3	R535	N3
C527	K5	R536	N3
C528	J4	R537	N3
C529	I4	R538	N3
C530	I4	R539	O3
C531	J4	R540	O3
C532	J5	R541	O4
C533	K3	R542	O5
C534	L3	R543	N5
C535	K3	R544	M5
C536	O4	R545	M5
C537	K5	R546	M5
C538	O4	R547	M6
C539	M3	R548	M6
C540	M3	R549	M6
C541	O3	R550	M7
C542	O4	R551	N6
C543	O5	R552	O7
C544	N3	R553	O7
C545	N4	R554	P7
C546	N6	R555	P7
C547	E3	R556	M7
C548	I4	R557	M8
C549	E4	R558	M8
C550	J7	R559	M8
C551	J7	R560	E6
C552	K7	R561	N8
C553	K7	R562	N8
C555	O7	R563	K7
C556	M8	R564	K7
C557	N9	R565	K7
C558	M9	R566	K7
C559	M9	R567	K8
C560	E2	R569	N9
C561	D2	R570	N9
C563	G7	R577	G11
C569	K5	R578	G11
C570	K5	R579	H11
C571	K5	R580	H11
C573	K3	R581	G8
C574	J4	R582	G8
D501	C3	R583	G8
D502	C3	R584	G8
D503	C3	R585	G8
D506	E3	R586	G8
D507	D3	R587	F8
D508	C2	R588	F8
D509	N8	R589	F8
D510	N8	R590	F8
GND	B3	R591	F8
IC501	H7	R592	F8
IC502	M10	R593	F8
IC503	J11	R594	F8
IC504	F4	R595	F8
IC505	M7	R596	F7
L501	C3	R598	K3
L502	C3	R599	K3
L503	C3	S501	O4
L504	C3	S502	O3
L505	K4	S503	N4
L506	K3	S504	N5
L508	N9	SW501	P4
L509	C2	SW502	P3
L510	C2	VR501	F7
LED501	N2	X501	J5
P5601	A7	X502	J7
PMD01	P8	X503	K7
PMD02	P6	ZD501	B4
PMD03	P10	ZD505	M9
PMD04	P11	ZD506	C4
PMD05	P10	ZD507	C4
Q504	C4		
Q508	K5		
Q509	K4		
Q510	K3		
Q511	M5		
Q512	M4		
Q513	M4		
Q515	G11		
Q516	H11		
Q517	H11		
Q518	D4		
R501	B4		

8. Y/C Circuit Diagram



Q301 is defective
No color in the playback

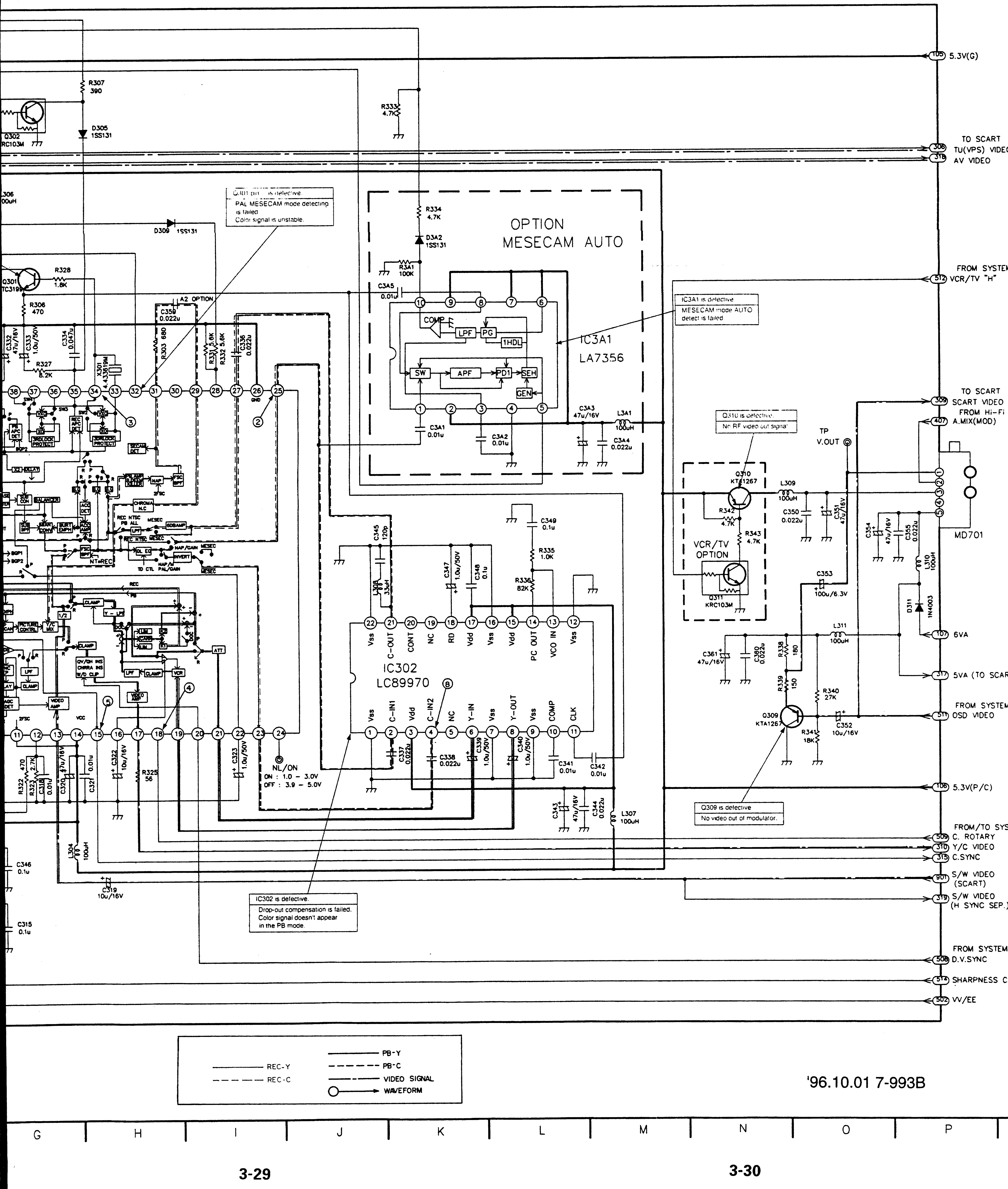
Q301 pin is defective.
PAL MESECAM mode de
is failed
Color signal is unstable.

Q304 is defective
Color signal doesn't appear in the PB mode

Q305 is defective.
Playback screen doesn't appear.

IC302 is defective.
Drop-out compens
Color signal doesn
in the PB mode.

FROM SYSTEM
TRICK "H"
MES DET"M"
IC303 TC4094BP
EXP
Vdd
OE
NTSC"H"
EURO"H"
F.AV "H"
DROP OUT"H"
QS'
QS
STROBE
DATA
CLOCK
MES"H"
Y/C SECAM"H"
LP"H"
EP"H"
Vss
FROM SYSTEM
EXP ENA
EXP DATA
EXP CLK
MES"H"
D3A1 1SS131
D312 1SS131
R329 5.6K
R330 6.8K
OPTION MESECAM MANUAL
SECAM OPTION
TO IF
PM703
N.C
GND
TUNER VIDEO
AV VIDEO
W324
A2 OPTION
FROM SYSTEM
PB "H"
C357 0.1u
R304 10K
Q304 KTC3199
R308 1.0K
R305 22K
R310 1.0K
FROM/TO SYSTEM
ENV COMP
V. H/SW
V.ENV
H.A.SW
REC START"H"
TO PRE-AMP
PM801
GND
REC START "H"
H.A.SW
V.ENV
V. H/SW
ENV COMP
REG 5V
REC Y
PB C
PB FM
LP "H"
REC COLOR
C303 0.1u
C317 0.1u
C329 1.0u/50V
L305 100uH
C301 0.022u
C302 47u/16V
R307 390
Q302 KRC103M
D305 1SS131
L306 100uH
D309 1SS131
Q301 KTC3199
R328 1.8K
R306 470
A2 OPTION
C359 0.022u
C324 0.01u
C328 1.0u/50V
C325 0.047u
C326 0.047u
C327 0.022u
R326 1.0K
C330 1.0u/50V
C331 0.022u
C332 47u/16V
C333 1.0u/50V
C334 0.047u
R327 8.2K
X301 4.433619M
R303 680
R331 5.6K
R332 5.6K
C336 0.022u
IC301
LA7449
GND
VCC
TO YNR
TO CTL PAL/GAIN
NT=REC
C304 0.01u
R315 2.2K
C305 10u/16V
C310 1.0u/50V
D302 1SS131
R316 2.7K
R317 680
R318 1.0K
C311 390p
C313 47p
C314 0.047u
C316 10u/16V
R319 12K
R322 470
R323 2.7K
C318 0.01u
C320 47u/16V
C321 0.01u
C322 10u/16V
R325 56
C323 1.0u/50V
NL/ON
ON : 1.0 - 3.
OFF : 3.9 - 5
R311 3.3K
C312 0.1u
R320 22K
C346 0.1u
L304 100uH
C319 10u/16V
C315 0.1u
Q312 KRC103M
C362 22p
R312 4.7K
R313 1.8K
C307 82p
Q305 KTA1267
R301 120
C308 180p
C306 39p
R314 1.0K
C309 27p
L303 33uH
REC-Y
REC-C
11
10
9
8
7
6
5
4
3
2
1
A
B
C
D
E
F
G
H
I


5.3V(G)
TO SCART
TU(VPS) VIDEO
AV VIDEO
FROM SYSTEM
VCR/TV "H"
TO SCART
SCART VIDEO
FROM Hi-Fi
A.MIX(MOD)
MD701
6VA
5VA (TO SCART)
FROM SYSTEM
OSD VIDEO
5.3V(P/C)
FROM/TO SYS
C. ROTARY
Y/C VIDEO
C.SYNC
S/W VIDEO (SCART)
S/W VIDEO (H SYNC SEP.)
FROM SYSTEM
D.V.SYNC
SHARPNESS C
W/EE
OPTION
MESECAM AUTO
IC3A1
LA7356
COMP
LPF
PG
1HDL
SW
APF
PD1
SEH
GEN
IC302
LC89970
Vss
C-OUT
CONT
NC
RD
Vdd
PC OUT
VCO IN
C-IN1
C-IN2
Y-IN
Y-OUT
CLK
VCR/TV OPTION
Q310 KTA1267
Q311 KRC103M
Q309 KTA1267
Q301 KTC3198
Q302 KRC103M
D305 1SS131
D309 1SS131
D3A2 1SS131
D311 1N4003
X301 4.433619M
A2 OPTION
TP V.OUT
NL/ON
ON : 1.0 – 3.0V
OFF : 3.9 – 5.0V
REC-Y
REC-C
PB-Y
PB-C
VIDEO SIGNAL
WAVEFORM
G
H
I
J
K
L
M
N
O
P

Q301 pin is defective.

PAL MESECAM mode detecting is failed
Color signal is unstable.

IC3A1 is defective

MESECAM mode AUTO detect is failed.

Q310 is defective.

No RF video out signal

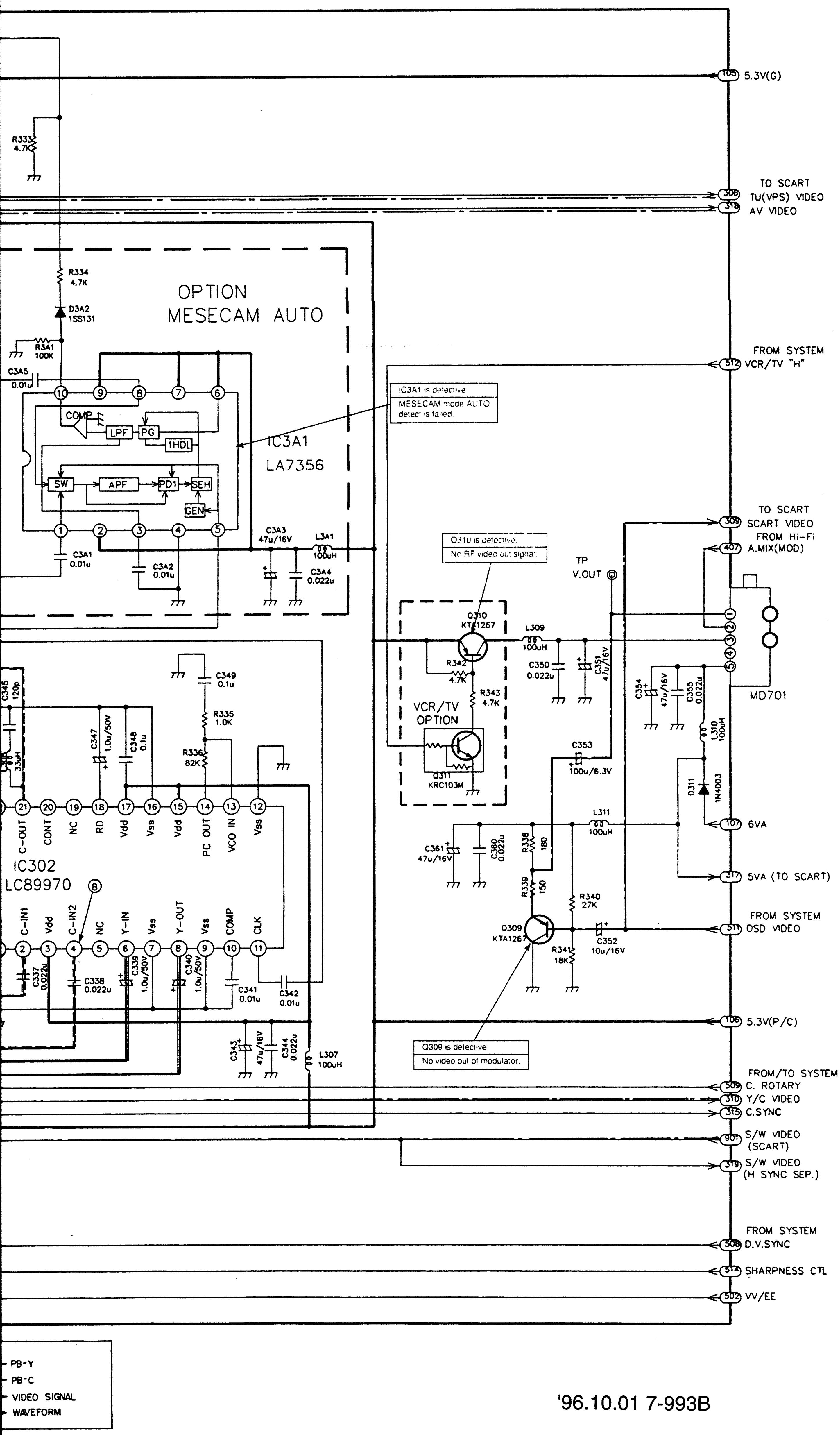
Q309 is defective

No video out of modulator.

IC302 is defective.

Drop-out compensation is failed.
Color signal doesn't appear in the PB mode.

'96.10.01 7-993B


5.3V(G)
TO SCART
TU(VPS) VIDEO
AV VIDEO
R333 4.7K
R334 4.7K
D3A2 1SS131
R3A1 100K
C3A5 0.01u
OPTION
MESECAM AUTO
IC3A1 is defective
MESECAM mode AUTO detect is failed
COMP
LPF
PG
1HDL
SW
APF
PD1
SEH
GEN
IC3A1
LA7356
C3A1 0.01u
C3A2 0.01u
C3A3 47u/16V
L3A1 100uH
C3A4 0.022u
FROM SYSTEM
VCR/TV "H"
Q310 is defective
No RF video out signal
TP
V.OUT
TO SCART
SCART VIDEO
FROM Hi-Fi
A.MIX(MOD)
Q310 KTA1267
L309 100uH
C350 0.022u
C351 47u/16V
R342 4.7K
R343 4.7K
VCR/TV OPTION
Q311 KRC103M
C354 47u/16V
C355 0.022u
L310 100uH
MD701
C353 100u/6.3V
D311 1N4003
L311 100uH
6VA
5VA (TO SCART)
C361 47u/16V
C360 0.022u
R338 180
R339 150
R340 27K
Q309 KTA1267
R341 18K
C352 10u/16V
FROM SYSTEM
OSD VIDEO
Q309 is defective
No video out of modulator.
5.3V(P/C)
C349 0.1u
R335 1.0K
R336 82K
C347 1.0u/50V
C348 0.1u
C345 120p
33uH
C-OUT
CONT
NC
RD
Vdd
Vss
Vdd
PC OUT
VCO IN
Vss
IC302
LC89970
C-IN1
Vdd
C-IN2
NC
Y-IN
Vss
Y-OUT
Vss
COMP
CLK
C337 0.022u
C338 0.022u
C339 1.0u/50V
C340 1.0u/50V
C341 0.01u
C342 0.01u
C343 47u/16V
C344 0.022u
L307 100uH
FROM/TO SYSTEM
C. ROTARY
Y/C VIDEO
C.SYNC
S/W VIDEO (SCART)
S/W VIDEO (H SYNC SEP.)
FROM SYSTEM
D.V.SYNC
SHARPNESS CTL
VV/EE
PB-Y
PB-C
VIDEO SIGNAL
WAVEFORM
K
L
M
N
O
P
Q

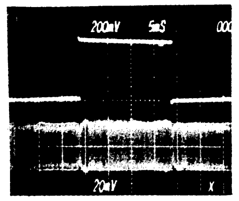
LOCATION GUIDE

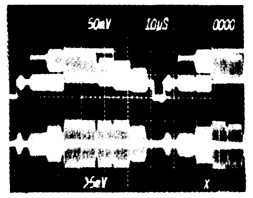
C301	E11
C302	E11
C303	C4
C304	E4
C305	E4
C306	F2
C307	E3
C308	E2
C309	E2
C310	F4
C311	F4
C312	F3
C313	F4
C314	F4
C315	G2
C316	G4
C317	C4
C318	G4
C319	H3
C320	G4
C321	H4
C322	H4
C323	I4
C324	E9
C325	E8
C326	E8
C327	F8
C328	F8
C329	B3
C330	F8
C331	G8
C332	G8
C333	G8
C334	G8
C336	I8
C337	K4
C338	K4
C339	K4
C340	L4
C341	L4
C342	M4
C343	L3
C344	M3
C345	J6
C346	G3
C347	K6
C348	K6
C349	L6
C350	N6
C351	O6
C352	O4
C353	O6
C354	O6
C355	P6
C357	B6
C359	H8
C360	N5
C361	N5
C362	D3
C3A1	K7
C3A2	L7
C3A3	L7
C3A4	M7
C3A5	J9
D302	F4
D305	H10
D309	H9
D311	P5
D312	C9
D3A1	C9
D3A2	K9
IC301	E6
IC302	J5
IC303	B10
IC3A1	L8
L303	E2
L304	G3
L305	F11
L306	G10
L307	M3
L308	J6
L309	N7
L310	P6
L311	O5
L3A1	M7
MD701	P6
PM703	A8
PM801	A5
Q301	G9
Q302	G10
Q304	C6
Q305	F3
Q309	N4
Q310	N7
Q311	N6
Q312	D3
R301	E3
R303	H8
R304	C6
R305	C5
R306	G9
R307	H11
R308	D6
R310	D5
R311	F3
R312	E3
R313	E3
R314	E2
R315	E4
R316	F4
R317	F4
R318	F4
R319	G4
R320	G3
R322	G4
R323	G4
R325	H4
R326	F8
R327	G8
R328	G9
R329	C9
R330	D9
R331	I8
R332	I8
R333	J10
R334	K9
R335	L6
R336	L6
R338	N5
R339	N5
R340	O5
R341	O4
R342	N6
R343	N6
R3A1	K9
W324	C7
X301	H8

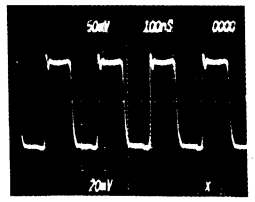
'96.10.01 7-993B

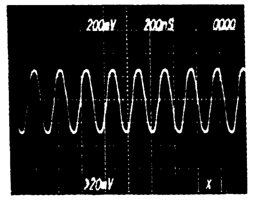
● Y/C Block Diagram

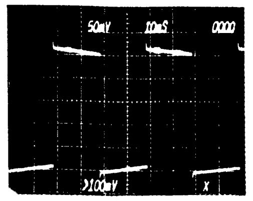
★ Y/C Oscilloscope Waveform

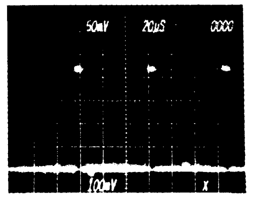
①

IC301 Pin ①
Playback RF (SP mode)
(20mV/5msec)

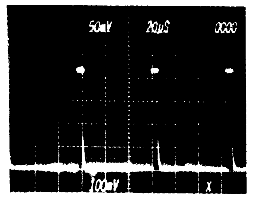
②

IC301 Pin ㉕
Playback Color
(5mV/10µ sec)

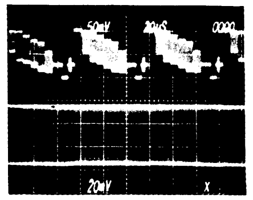
③

IC301 Pin ㉞
Playback Mode : Fsc
Oscillation (20mV/100nsec)

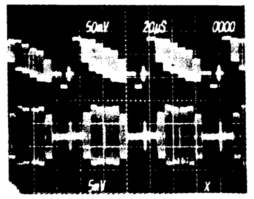
③

IC301 Pin ㉞
Record Mode:Fsc
Oscillation (20mV/200nsec)

④

IC301 Pin ⑱
S/W 25 (100mV/10msec)

⑤

IC301 Pin ⑮ C.SYNC
(100mV/20µ sec)

⑥

IC301 Pin ㊵
B.G.P Out terminal
(100mV/20µ sec)

⑦

IC301 Pin ②
Record FM signal
(20mV/20µ sec)

⑧

IC302 Pin ④
Record Color Signal
(5mV/20µ sec)

★ Y/C IC Voltage Sheet

0 (0)	1.6 (1.6)	0 (0)	2.0 (2.0)	3.3 (2.4)	2.7 (2.7)	2.7 (2.7)	0 (0)	4.0 (4.0)	5.0 (5.0)	0 (0)	0 (0)	0 (0)	2.0 (2.0)	2.7 (2.7)	4.0 (4.0)	0.2 (0.2)	2.5 (0)	0.1 (0.1)	1.9 (1.9)	0.2 (0.2)	2.5 (2.5)	0 (0)	2.6 (2.6)
			45					40					35					30					25

IC301 (LA7449)

1				5					10					15					20				
3.2 (2.3)	3.5 (2.8)	4.2 (4.2)	3.0 (2.0)	3.0 (2.8)	4.7 (2.0)	4.7 (2.0)	2.6 (2.6)	2.5 (2.5)	2.3 (1.5)	5.0 (5.0)	3.6 (3.6)	4.0 (2.6)	5.0 (5.0)	4.3 (4.3)	3.2 (3.2)	0.9 (0.9)	5.2 (5.2)	2.0 (2.0)	0 (0)	0.9 (0.9)	2.2 (2.2)	2.5 (2.5)	0.2 (0.2)

PB(REC)

0 (0)	1.5 (1.5)	0 (0)	5.0 (5.0)	8.4 (8.4)	5.1 (5.1)	0 (0)	5.1 (5.1)	2.0 (2.0)	2.0 (2.0)	0 (0)
		20					15			

IC302 (LC89970)

1				5					10	
0 (0)	2.4 (2.4)	5.1 (5.1)	2.4 (2.4)	0 (0)	2.1 (2.1)	0 (0)	1.1 (1.1)	0 (0)	2.5 (2.5)	1.2 (1.2)

PB(REC)

0.2 (0.2)	5.2 (5.2)	0 (0)	5.2 (5.2)	2.6 (2.6)
10				6

IC3A1 (LA7356)

1				5
0 (0)	5.2 (5.2)	1.2 (1.2)	0 (0)	4.0 (4.0)

IC303 (TC4094BP)

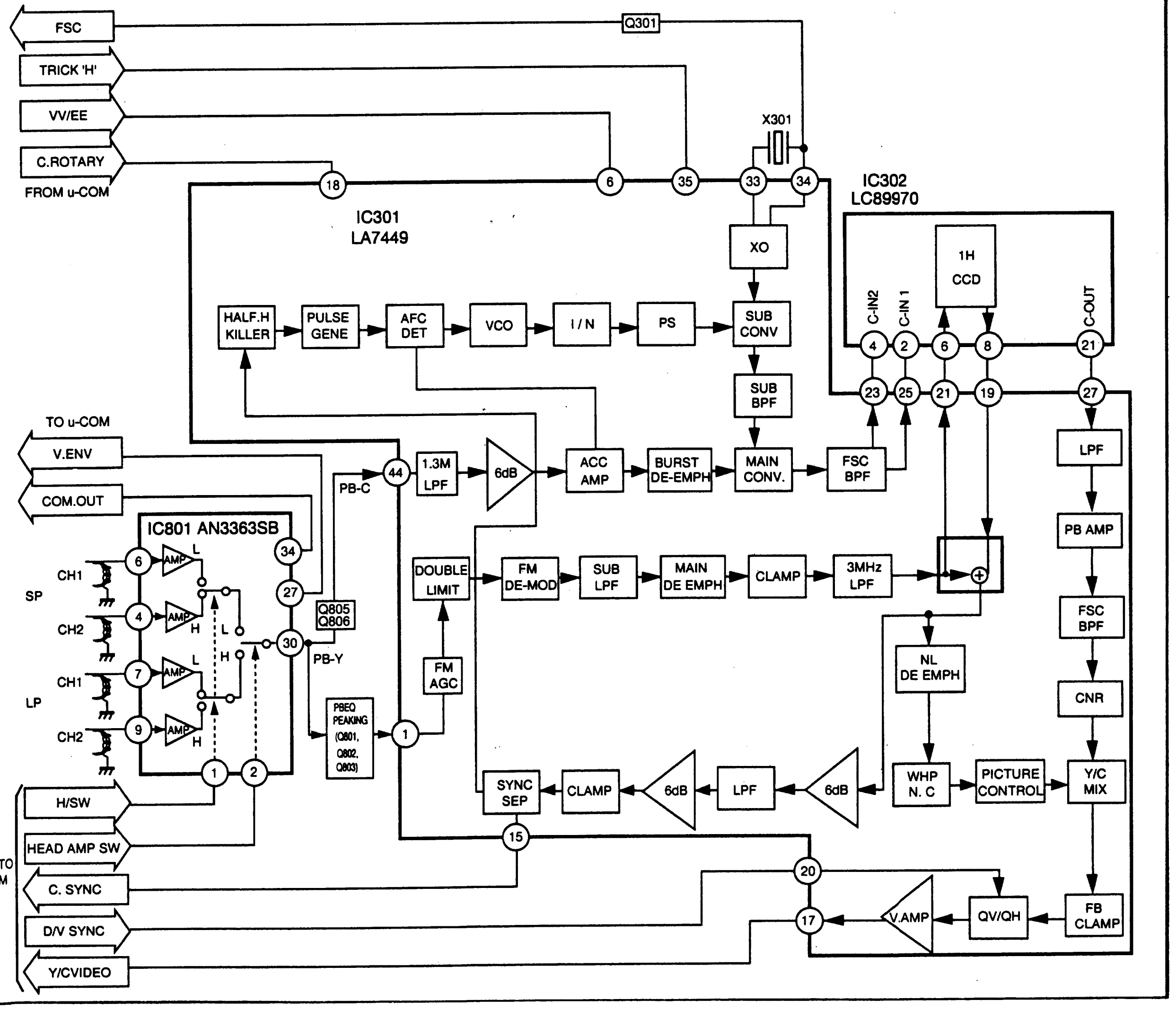
Pin	Voltage	Mode
1	5.0	STROBE
2	5.0	DATA
3	5.0	CLOCK
4	5.0	MESECAM
5	0.0	
6	5.0	LP "H"
7	0.0	
8	0.0	GND
9	0.0	
10	0.0	
11	0.0	
12	0.0	F. AV "H"
13	0.0	EURO "H"
14	0.0	
15	5.2	Vcc
16	5.2	Vcc

★ Y/C TR Voltage Sheet

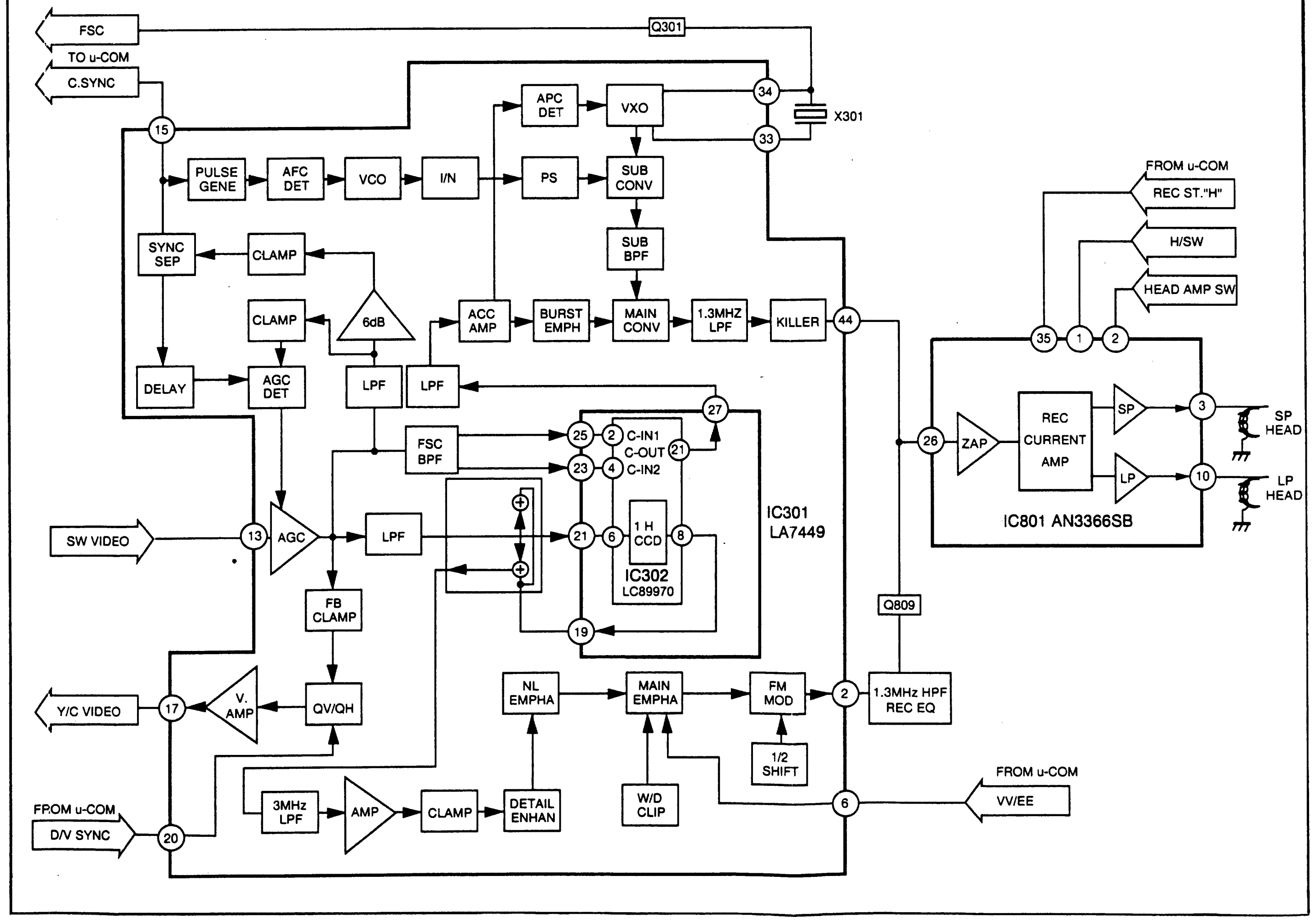
(UNIT:V)

Port / TR NO.	Emitter		Collector		Base	
	PB	REC	PB	REC	PB	REC
Q301	1.9	2.1	5.0	5.0	2.6	2.7
Q304	2.4	0.0	2.5	5.0	3.1	0.0
Q305	3.5	2.6	0	0	2.9	2.0
Q309	2.0	2.0	0	0	1.3	1.3
Q310	5.2	5.2	5.1	5.1	4.5	4.5
Q311	0	0	0.0	0.0	5.2	5.2
Q312	0	0	0.0	0.0	0.0	0.0

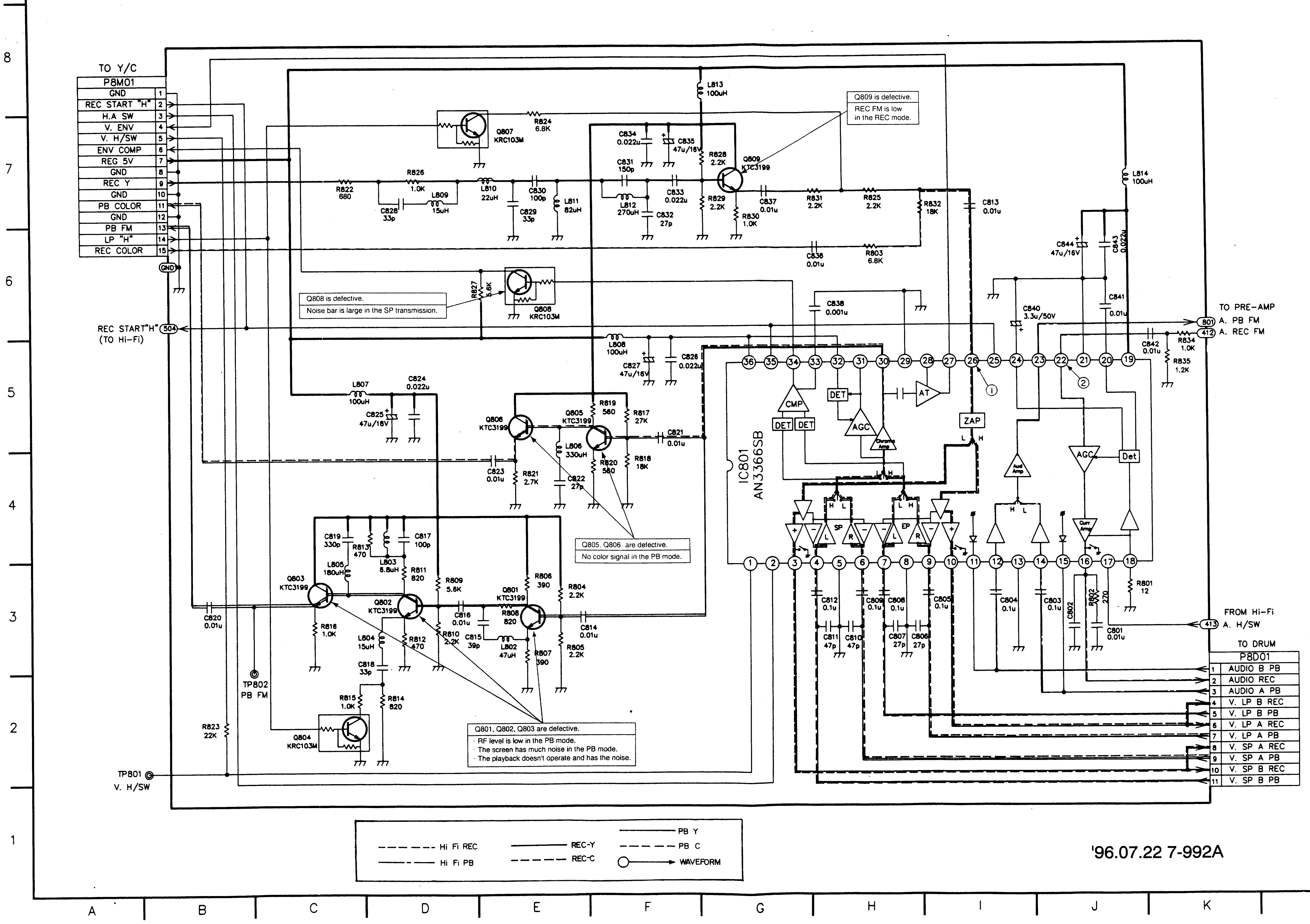
● PB Mode


FSC
Q301
TRICK 'H'
VV/EE
C.ROTARY
FROM u-COM
X301
IC301
LA7449
IC302
LC89970
XO
1H
CCD
C-IN2
C-IN 1
C-OUT
HALF.H KILLER
PULSE GENE
AFC DET
VCO
I / N
PS
SUB CONV
SUB BPF
TO u-COM
V.ENV
COM.OUT
IC801 AN3363SB
CH1
SP
CH2
CH1
LP
CH2
AMP
L
H
PB-C
PB-Y
Q805
Q806
PBEQ PEAKING (Q801, Q802, Q803)
1.3M LPF
6dB
ACC AMP
BURST DE-EMPH
MAIN CONV.
FSC BPF
DOUBLE LIMIT
FM AGC
FM DE-MOD
SUB LPF
MAIN DE EMPH
CLAMP
3MHz LPF
NL DE EMPH
LPF
PB AMP
FSC BPF
CNR
WHP N. C
PICTURE CONTROL
Y/C MIX
SYNC SEP
CLAMP
6dB
LPF
6dB
V.AMP
QV/QH
FB CLAMP
H/SW
HEAD AMP SW
FROM/TO u-COM
C. SYNC
D/V SYNC
Y/CVIDEO

● REC Mode


FSC
TO u-COM
C.SYNC
Q301
X301
APC DET
VXO
PULSE GENE
AFC DET
VCO
I/N
PS
SUB CONV
SUB BPF
SYNC SEP
CLAMP
CLAMP
6dB
ACC AMP
BURST EMPH
MAIN CONV
1.3MHZ LPF
KILLER
FROM u-COM
REC ST."H"
H/SW
HEAD AMP SW
DELAY
AGC DET
LPF
LPF
FSC BPF
C-IN1
C-OUT
C-IN2
1 H CCD
IC302
LC89970
IC301
LA7449
ZAP
REC CURRENT AMP
SP
LP
SP HEAD
LP HEAD
IC801 AN3366SB
SW VIDEO
AGC
LPF
FB CLAMP
Q809
Y/C VIDEO
V. AMP
QV/QH
NL EMPHA
MAIN EMPHA
FM MOD
1.3MHz HPF REC EQ
1/2 SHIFT
W/D CLIP
FROM u-COM
VV/EE
FROM u-COM
D/V SYNC
3MHz LPF
AMP
CLAMP
DETAIL ENHAN

8. Pre-Amp Circuit Diagram


TO Y/C
P8M01
1 GND
2 REC START "H"
3 H.A SW
4 V. ENV
5 V. H/SW
6 ENV COMP
7 REG 5V
8 GND
9 REC Y
10 GND
11 PB COLOR
12 GND
13 PB FM
14 LP "H"
15 REC COLOR
GND1
REC START"H" 504 (TO Hi-Fi)
TP801 V. H/SW
TP802 PB FM
Q801 KTC3199
Q802 KTC3199
Q803 KTC3199
Q804 KRC103M
Q805 KTC3199
Q806 KTC3199
Q807 KRC103M
Q808 KRC103M
Q809 KTC3199
IC801 AN3366SB
CMP
DET
AGC
AT
ZAP
Det
TO PRE-AMP
801 A. PB FM
412 A. REC FM
FROM Hi-Fi
413 A. H/SW
TO DRUM
P8D01
1 AUDIO B PB
2 AUDIO REC
3 AUDIO A PB
4 V. LP B REC
5 V. LP B PB
6 V. LP A REC
7 V. LP A PB
8 V. SP A REC
9 V. SP A PB
10 V. SP B REC
11 V. SP B PB
Hi Fi REC
Hi Fi PB
REC-Y
REC-C
PB Y
PB C
WAVEFORM
A B C D E F G H I J K
1 2 3 4 5 6 7 8

Q809 is defective.
REC FM is low in the REC mode.

Q808 is defective.
Noise bar is large in the SP transmission.

Q805, Q806 are defective.
No color signal in the PB mode.

Q801, Q802, Q803 are defective.
· RF level is low in the PB mode.
· The screen has much noise in the PB mode.
· The playback doesn't operate and has the noise.

LOCATION GUIDE

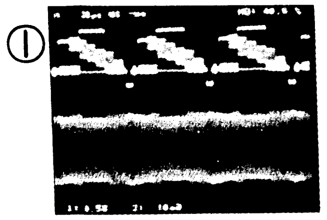
C801	J3
C802	J3
C803	J3
C804	I3
C805	I3
C806	H3
C807	H3
C808	H3
C809	H3
C810	H3
C811	H3
C812	H3
C813	I7
C814	E3
C815	D3
C816	D3
C817	D4
C818	C3
C819	C4
C820	B3
C821	F5
C822	E4
C823	E4
C824	D5
C825	D5
C826	F5
C827	F5
C828	D7
C829	E7
C830	E7
C831	F7
C832	F7
C833	F7
C834	F7
C835	F7
C836	G6
C837	G7
C838	H6
C840	I6
C841	J6
C842	J5
C843	J6
C844	J6
GND1	B6
IC801	G4
L802	E3
L803	D3
L804	C3
L805	C3
L806	E5
L807	C5
L808	F5
L809	D7
L810	E7
L811	E7
L812	F7
L813	G8
L814	J7
P8D01	K3
P8M01	A8
Q801	E3
Q802	D3
Q803	C3
Q804	C2
Q805	E5
Q806	E5
Q807	E7
Q808	E6
Q809	G7
R801	J3
R802	J3
R803	H6
R804	E3
R805	E3
R806	E3
R807	E3
R808	E3
R809	D3
R810	D3
R811	D3
R812	D3
R813	C4
R814	D2
R815	C2
R816	C3
R817	F5
R818	F4
R819	F5
R820	F4
R821	E4
R822	C7
R823	B2
R824	E7
R825	H7
R826	D7
R827	E6
R828	G7
R829	G7
R830	G7
R831	G7
R832	I7
R834	K5
R835	K5
TP801	A2
TP802	B2

'96.07.22 7-992A

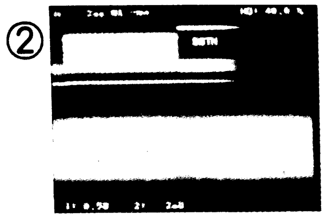
L M

● Pre-Amp Block Diagram

★ Pre-Amp Oscilloscope Waveform



① IC801 PIN ㉖
REC Y FM



② IC801 PIN ㉒
REC AUDIO FM

★ Pre-Amp IC/TR Voltage Sheet

PB(REC)

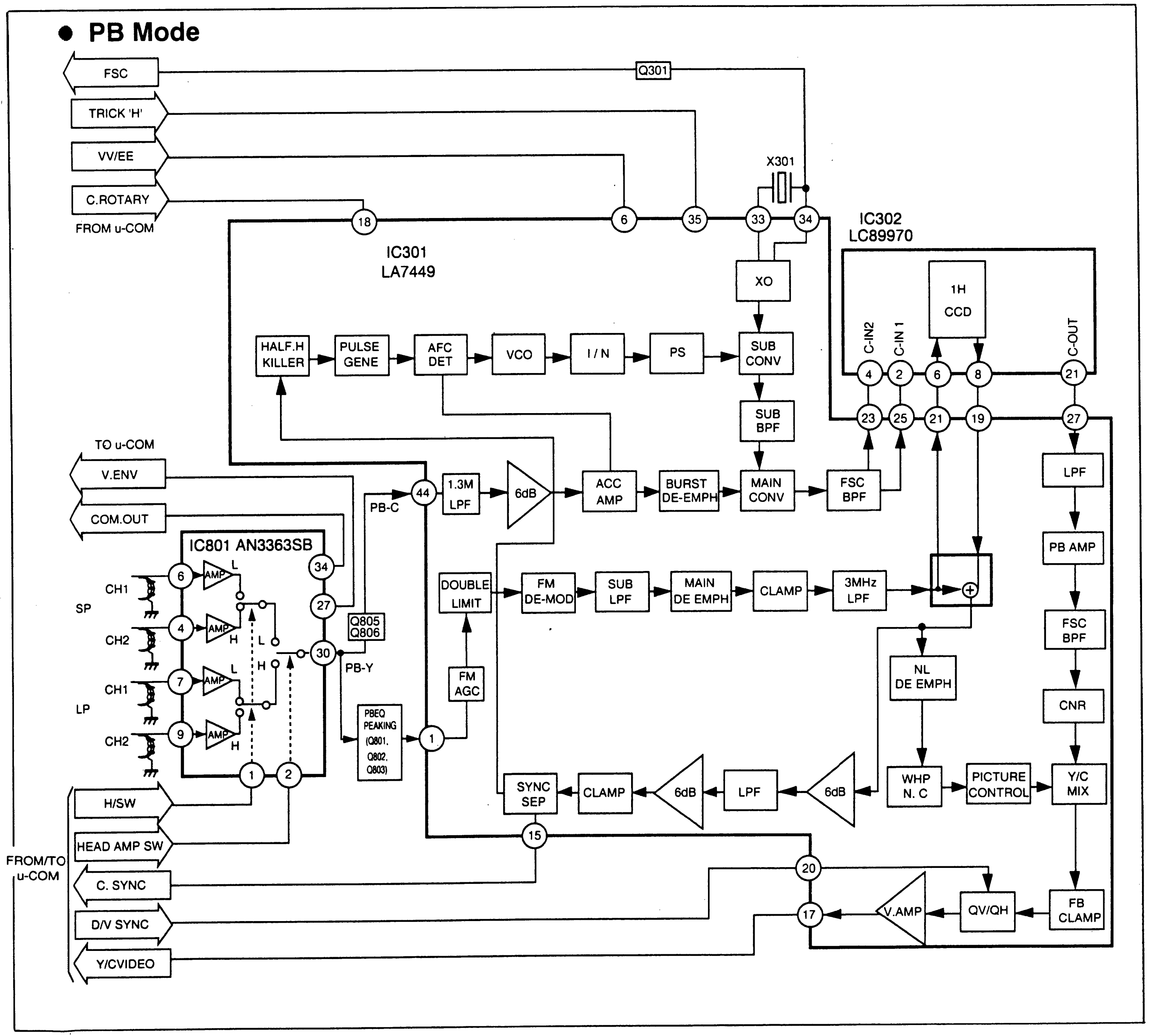
5.2 (5.1)	0.0 (5.1)	5.1 (5.0)	0.8 (3.5)	5.2 (5.1)	2.6 (4.3)	2.6 (1.9)	0 (0)	2.5 (2.3)	3.2 (2.6)	1.4 (1.4)	0.0 (5.1)	0.0 (1.0)	2.0 (2.0)	1.5 (1.9)	0 (0)	3.3 (3.2)	5.2 (5.2)
	35					30					25					20	
1				5					10					15			
5.1 (5.1)	0.0 (0.0)	0.0 (2.8)	0.6 (2.8)	0 (0)	0.6 (2.9)	0.6 (2.5)	0 (0)	0.6 (2.5)	0.0 (2.5)	0.0 (4.2)	0.6 (0.5)	0 (0)	0.6 (0.5)	0.0 (4.2)	0.0 (4.2)	5.1 (5.1)	0.0 (0.5)

IC801 (AN3366SB)

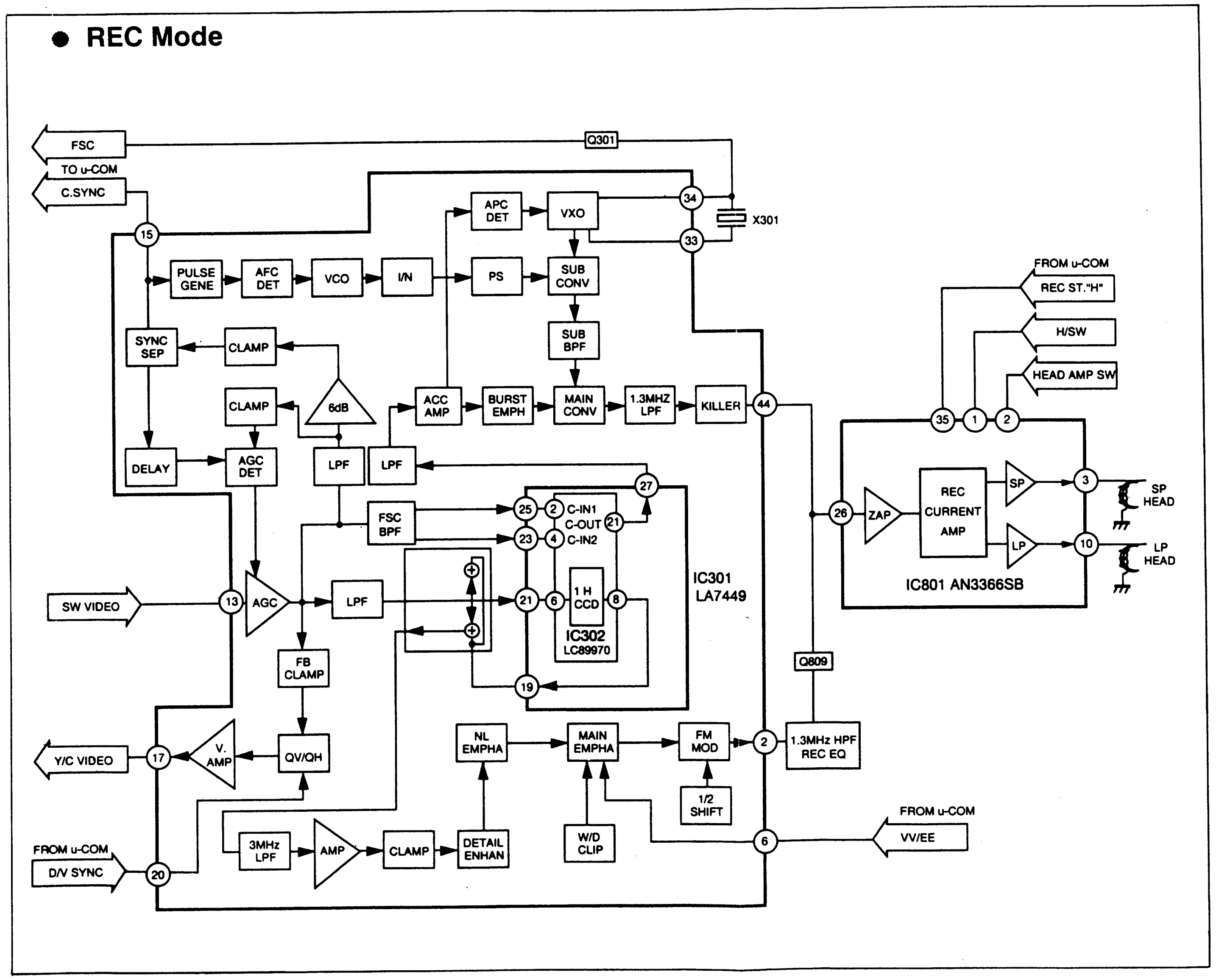
(UNIT:V)

Port / TR NO.	Emitter		Collector		Base	
	PB	REC	PB	REC	PB	REC
Q801	1.8	1.8	3.3	3.3	2.5	2.5
Q802	0.8	0.8	3.6	3.6	1.4	1.4
Q803	3.0	3.0	5.2	5.2	3.8	3.7
Q804	0.0	0.0	0.0	0.0	0.0	0.0
Q805	1.4	1.4	3.7	3.7	2.0	2.0
Q806	3.1	3.1	5.2	5.2	3.8	3.8
Q807	0	0	0.0	0.0	0.0	0.0
Q808	0	0	0.0	5.2	5.0	0.0
Q809	2.0	1.9	5.2	5.2	2.6	2.6

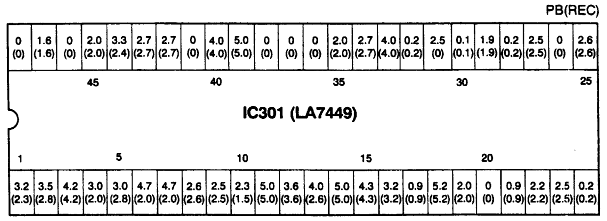
● PB Mode


FSC
Q301
TRICK 'H'
VV/EE
C.ROTARY
FROM u-COM
X301
IC301
LA7449
IC302
LC89970
XO
HALF.H KILLER
PULSE GENE
AFC DET
VCO
I / N
PS
SUB CONV
SUB BPF
1H CCD
C-IN2
C-IN 1
C-OUT
TO u-COM
V.ENV
COM.OUT
IC801 AN3363SB
CH1
CH2
SP
LP
AMP
PB-C
PB-Y
Q805
Q806
PBEQ PEAKING (Q801, Q802, Q803)
1.3M LPF
6dB
ACC AMP
BURST DE-EMPH
MAIN CONV
FSC BPF
DOUBLE LIMIT
FM DE-MOD
SUB LPF
MAIN DE EMPH
CLAMP
3MHz LPF
FM AGC
NL DE EMPH
WHP N. C
PICTURE CONTROL
LPF
PB AMP
FSC BPF
CNR
Y/C MIX
FB CLAMP
QV/QH
V.AMP
SYNC SEP
H/SW
HEAD AMP SW
C. SYNC
D/V SYNC
Y/CVIDEO
FROM/TO u-COM

● REC Mode

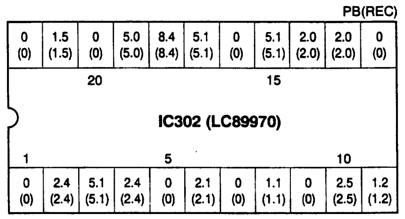

FSC
TO u-COM
C.SYNC
Q301
X301
APC DET
VXO
PULSE GENE
AFC DET
VCO
I/N
PS
SUB CONV
SUB BPF
SYNC SEP
CLAMP
6dB
ACC AMP
BURST EMPH
MAIN CONV
1.3MHZ LPF
KILLER
DELAY
AGC DET
LPF
FSC BPF
C-IN1
C-OUT
C-IN2
1 H CCD
IC302
LC89970
IC301
LA7449
SW VIDEO
AGC
FB CLAMP
Y/C VIDEO
V. AMP
QV/QH
NL EMPHA
MAIN EMPHA
FM MOD
1/2 SHIFT
W/D CLIP
3MHz LPF
AMP
DETAIL ENHAN
FROM u-COM
D/V SYNC
VV/EE
Q809
1.3MHz HPF REC EQ
REC ST."H"
H/SW
HEAD AMP SW
ZAP
REC CURRENT AMP
SP
LP
SP HEAD
LP HEAD
IC801 AN3366SB

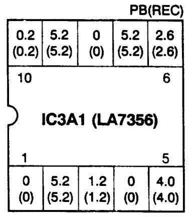
★ Total IC/TR Voltage Sheet


PB(REC)
0 (0) | 1.6 (1.6) | 0 (0) | 2.0 (2.0) | 3.3 (2.4) | 2.7 (2.7) | 2.7 (2.7) | 0 (0) | 4.0 (4.0) | 5.0 (5.0) | 0 (0) | 0 (0) | 0 (0) | 2.0 (2.0) | 2.7 (2.7) | 4.0 (4.0) | 0.2 (0.2) | 2.5 (0) | 0.1 (0.1) | 1.9 (1.9) | 0.2 (0.2) | 2.5 (2.5) | 0 (0) | 2.6 (2.6)
45
40
35
30
25
IC301 (LA7449)
1
5
10
15
20
3.2 (2.3) | 3.5 (2.8) | 4.2 (4.2) | 3.0 (2.0) | 3.0 (2.8) | 4.7 (2.0) | 4.7 (2.0) | 2.6 (2.6) | 2.5 (2.5) | 2.3 (1.5) | 5.0 (5.0) | 3.6 (3.6) | 4.0 (2.6) | 5.0 (5.0) | 4.3 (4.3) | 3.2 (3.2) | 0.9 (0.9) | 5.2 (5.2) | 2.0 (2.0) | 0 (0) | 0.9 (0.9) | 2.2 (2.2) | 2.5 (2.5) | 0.2 (0.2)

· IC303 (TC4094BP)

Pin	Voltage	Mode
1	5.0	STROBE
2	5.0	DATA
3	5.0	CLOCK
4	5.0	MESECAM
5	0.0	
6	5.0	LP "H"
7	0.0	
8	0.0	GND
9	0.0	
10	0.0	
11	0.0	
12	0.0	F. AV "H"
13	0.0	EURO "H"
14	0.0	
15	5.2	Vcc
16	5.2	Vcc


PB(REC)
0 (0) | 1.5 (1.5) | 0 (0) | 5.0 (5.0) | 8.4 (8.4) | 5.1 (5.1) | 0 (0) | 5.1 (5.1) | 2.0 (2.0) | 2.0 (2.0) | 0 (0)
20
15
IC302 (LC89970)
1
5
10
0 (0) | 2.4 (2.4) | 5.1 (5.1) | 2.4 (2.4) | 0 (0) | 2.1 (2.1) | 0 (0) | 1.1 (1.1) | 0 (0) | 2.5 (2.5) | 1.2 (1.2)


PB(REC)
0.2 (0.2) | 5.2 (5.2) | 0 (0) | 5.2 (5.2) | 2.6 (2.6)
10
6
IC3A1 (LA7356)
1
5
0 (0) | 5.2 (5.2) | 1.2 (1.2) | 0 (0) | 4.0 (4.0)

TR Voltage

(UNIT:V)

Port / TR NO.	Emitter		Collector		Base	
	PB	REC	PB	REC	PB	REC
Q101	12.1	12.1	15.1	15.0	13.2	13.2
Q102	12.5	12.5	15.1	15.0	13.6	13.6
Q103	0.0	0.0	0.0	0.0	0.7	0.7
Q104	39.5	39.5	39.5	39.5	38.8	39.0
Q105	0.0	0.0	0.0	0.0	0.7	0.7
Q106	5.1	5.1	6.0	6.0	5.8	5.8
Q107	5.4	5.4	6.0	6.0	6.1	6.1
Q108	13.2	13.2	13.2	13.2	0.0	0.0

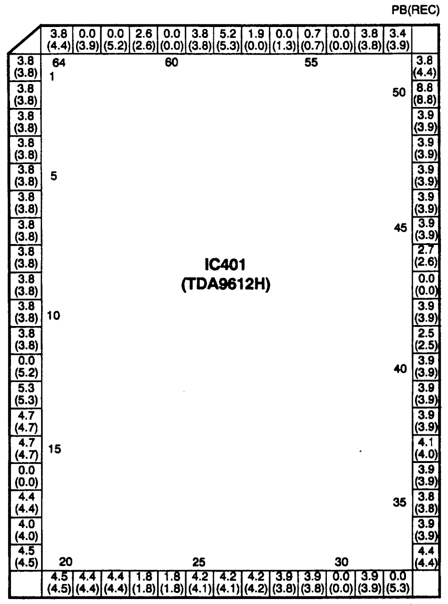
(UNIT:V)

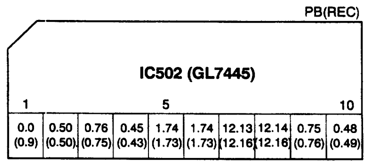
Port / TR NO.	Emitter		Collector		Base	
	PB	REC	PB	REC	PB	REC
Q301	1.9	2.1	5.0	5.0	2.6	2.7
Q304	2.4	0.0	2.5	5.0	3.1	0.0
Q305	3.5	2.6	0	0	2.9	2.0
Q309	2.0	2.0	0	0	1.3	1.3
Q310	5.2	5.2	5.1	5.1	4.5	4.5
Q311	0	0	0.0	0.0	5.2	5.2
Q312	0	0	0.0	0.0	0.0	0.0

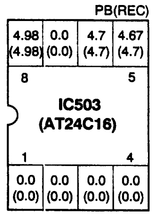
(UNIT:V)

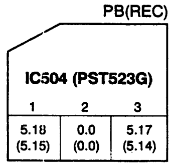
Port / TR NO.	Emitter		Collector		Base	
	PB	REC	PB	REC	PB	REC
Q401	9.0	9.0	12.3	12.2	9.6	9.6
Q402	12.3	12.4	0.3	12.3	12.3	11.6
Q403	0.0	0.0	12.3	0.1	0.0	5.1
Q404	0.0	0.7	0.3	12.0	0.3	1.1
Q405	0.0	0.0	0.0	0.0	0.0	0.0

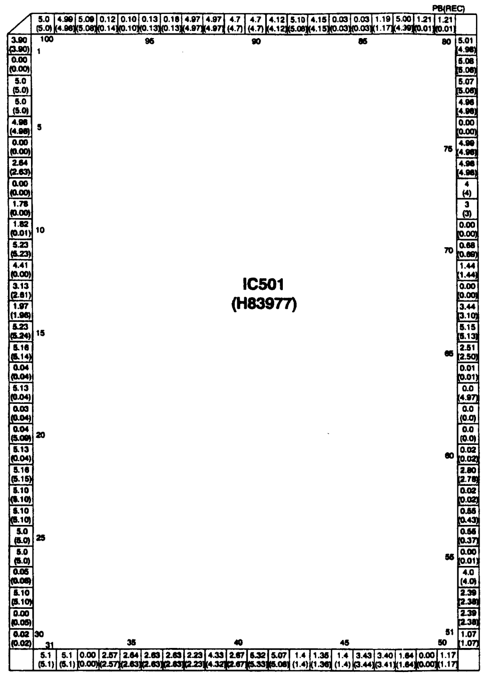
Port / TR NO.	Emitter		Collector		Base	
	PB	REC	PB	REC	PB	REC
Q504	2.92	3.03	0.0	0.0	2.29	2.39
Q508	0.00	0.00	0.10	0.10	0.02	0.02
Q509	0.00	0.00	5.05	5.05	0.01	0.00
Q510	0.15	0.15	1.6	1.6	0.13	0.10
Q511	5.08	5.08	0.31	0.10	5.05	5.05
Q512	0.00	0.00	5.0	5.0	4.9	4.9
Q513	0.00	0.00	5.0	5.0	4.9	4.9
Q515	0.00	0.00	12.52	12.52	0.01	0.01
Q516	12.53	12.53	12.53	12.51	11.79	11.79
Q517	0.00	0.00	0.00	0.04	5.10	5.08
Q518	2.46	2.58	0.00	0.01	1.79	1.92


PB(REC)
3.8 (4.4) | 0.0 (3.9) | 0.0 (5.2) | 2.6 (2.6) | 0.0 (0.0) | 3.8 (3.8) | 5.2 (5.3) | 1.9 (0.0) | 0.0 (1.3) | 0.7 (0.7) | 0.0 (0.0) | 3.8 (3.8) | 3.4 (3.9)
64
60
55
1
5
10
15
20
25
30
35
40
45
50
IC401
(TDA9612H)
3.8 (3.8) | 3.8 (3.8) | 3.8 (3.8) | 3.8 (3.8) | 3.8 (3.8) | 3.8 (3.8) | 3.8 (3.8) | 3.8 (3.8) | 3.8 (3.8) | 3.8 (3.8) | 3.8 (3.8) | 0.0 (5.2) | 5.3 (5.3) | 4.7 (4.7) | 4.7 (4.7) | 0.0 (0.0) | 4.4 (4.4) | 4.0 (4.0) | 4.5 (4.5)
4.5 (4.5) | 4.4 (4.4) | 4.4 (4.4) | 1.8 (1.8) | 1.8 (1.8) | 4.2 (4.1) | 4.2 (4.1) | 4.2 (4.2) | 3.9 (3.8) | 3.9 (3.8) | 0.0 (0.0) | 3.9 (3.9) | 0.0 (5.3)
3.8 (4.4) | 8.8 (8.8) | 3.9 (3.9) | 3.9 (3.9) | 3.9 (3.9) | 3.9 (3.9) | 3.9 (3.9) | 2.7 (2.6) | 0.0 (0.0) | 3.9 (3.9) | 2.5 (2.5) | 3.9 (3.9) | 3.9 (3.9) | 3.9 (3.9) | 4.1 (4.0) | 3.9 (3.9) | 3.8 (3.8) | 3.9 (3.9) | 4.4 (4.4)


PB(REC)
IC502 (GL7445)
1
5
10
0.0 (0.9) | 0.50 (0.50) | 0.76 (0.75) | 0.45 (0.43) | 1.74 (1.73) | 1.74 (1.73) | 12.13 (12.16) | 12.14 (12.16) | 0.75 (0.76) | 0.48 (0.49)


PB(REC)
4.98 (4.98) | 0.0 (0.0) | 4.7 (4.7) | 4.67 (4.7)
8
5
IC503
(AT24C16)
1
4
0.0 (0.0) | 0.0 (0.0) | 0.0 (0.0) | 0.0 (0.0)


PB(REC)
IC504 (PST523G)
1
2
3
5.18 (5.15) | 0.0 (0.0) | 5.17 (5.14)

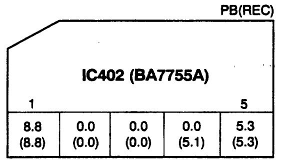

PB(REC)
IC501
(H83977)

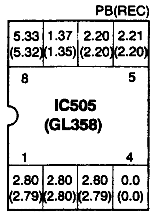
(UNIT:V)

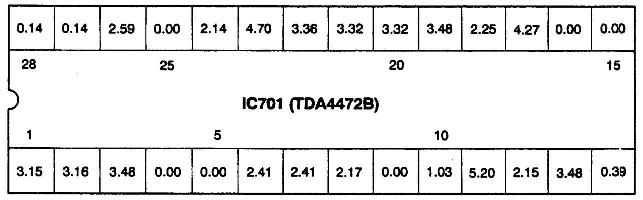
Port / TR NO.	Emitter	Collector	Base
Q701	4.23	12.44	4.84
Q702	0.00	4.54	-1.88
Q703	5.06	2.36	4.84
Q709	2.03	12.40	2.73
Q713	0.92	5.04	1.54
Q714	1.54	5.04	2.14

(UNIT:V)

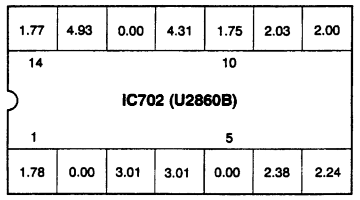
Port / TR NO.	Emitter		Collector		Base	
	PB	REC	PB	REC	PB	REC
Q801	1.8	1.8	3.3	3.3	2.5	2.5
Q802	0.8	0.8	3.6	3.6	1.4	1.4
Q803	3.0	3.0	5.2	5.2	3.8	3.7
Q804	0.0	0.0	0.0	0.0	0.0	0.0
Q805	1.4	1.4	3.7	3.7	2.0	2.0
Q806	3.1	3.1	5.2	5.2	3.8	3.8
Q807	0	0	0.0	0.0	0.0	0.0
Q808	0	0	0.0	5.2	5.0	0.0
Q809	2.0	1.9	5.2	5.2	2.6	2.6

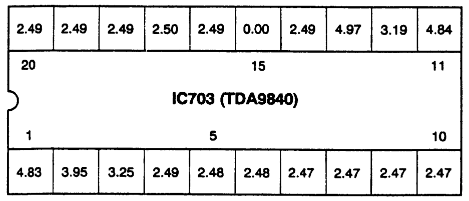

PB(REC)
IC402 (BA7755A)
1
5
8.8 (8.8) | 0.0 (0.0) | 0.0 (0.0) | 0.0 (5.1) | 5.3 (5.3)

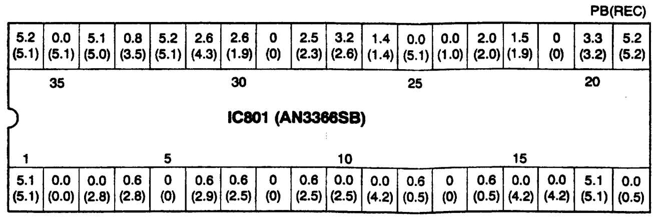

PB(REC)
5.33 (5.32) | 1.37 (1.35) | 2.20 (2.20) | 2.21 (2.20)
8
5
IC505
(GL358)
1
4
2.80 (2.79) | 2.80 (2.80) | 2.80 (2.79) | 0.0 (0.0)

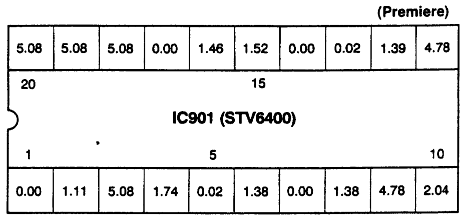

0.14 | 0.14 | 2.59 | 0.00 | 2.14 | 4.70 | 3.36 | 3.32 | 3.32 | 3.48 | 2.25 | 4.27 | 0.00 | 0.00
28
25
20
15
IC701 (TDA4472B)
1
5
10
3.15 | 3.16 | 3.48 | 0.00 | 0.00 | 2.41 | 2.41 | 2.17 | 0.00 | 1.03 | 5.20 | 2.15 | 3.48 | 0.39

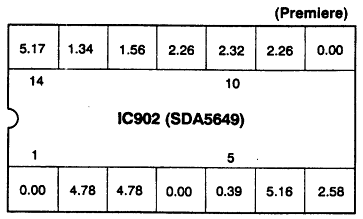
Port / TR NO.	Emitter	Collector	Base
Q901	0.50	5.19	1.11
Q902	0.00	5.16	0.01
Q903	5.18	-0.57	5.16
Q904	0.00	0.00	-0.57
Q905	0.00	0.00	-0.57
Q906	2.17	0.00	1.46
Q907	2.23	0.00	1.52

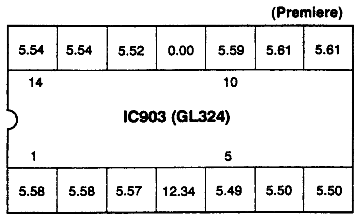

1.77 | 4.93 | 0.00 | 4.31 | 1.75 | 2.03 | 2.00
14
10
IC702 (U2860B)
1
5
1.78 | 0.00 | 3.01 | 3.01 | 0.00 | 2.38 | 2.24


2.49 | 2.49 | 2.49 | 2.50 | 2.49 | 0.00 | 2.49 | 4.97 | 3.19 | 4.84
20
15
11
IC703 (TDA9840)
1
5
10
4.83 | 3.95 | 3.25 | 2.49 | 2.48 | 2.48 | 2.47 | 2.47 | 2.47 | 2.47


PB(REC)
5.2 (5.1) | 0.0 (5.1) | 5.1 (5.0) | 0.8 (3.5) | 5.2 (5.1) | 2.6 (4.3) | 2.6 (1.9) | 0 (0) | 2.5 (2.3) | 3.2 (2.6) | 1.4 (1.4) | 0.0 (5.1) | 0.0 (1.0) | 2.0 (2.0) | 1.5 (1.9) | 0 (0) | 3.3 (3.2) | 5.2 (5.2)
35
30
25
20
IC801 (AN3366SB)
1
5
10
15
5.1 (5.1) | 0.0 (0.0) | 0.0 (2.8) | 0.6 (2.8) | 0 (0) | 0.6 (2.9) | 0.6 (2.5) | 0 (0) | 0.6 (2.5) | 0.0 (2.5) | 0.0 (4.2) | 0.6 (0.5) | 0 (0) | 0.6 (0.5) | 0.0 (4.2) | 0.0 (4.2) | 5.1 (5.1) | 0.0 (0.5)


(Premiere)
5.08 | 5.08 | 5.08 | 0.00 | 1.46 | 1.52 | 0.00 | 0.02 | 1.39 | 4.78
20
15
IC901 (STV6400)
1
5
10
0.00 | 1.11 | 5.08 | 1.74 | 0.02 | 1.38 | 0.00 | 1.38 | 4.78 | 2.04


(Premiere)
5.17 | 1.34 | 1.56 | 2.26 | 2.32 | 2.26 | 0.00
14
10
IC902 (SDA5649)
1
5
0.00 | 4.78 | 4.78 | 0.00 | 0.39 | 5.16 | 2.58

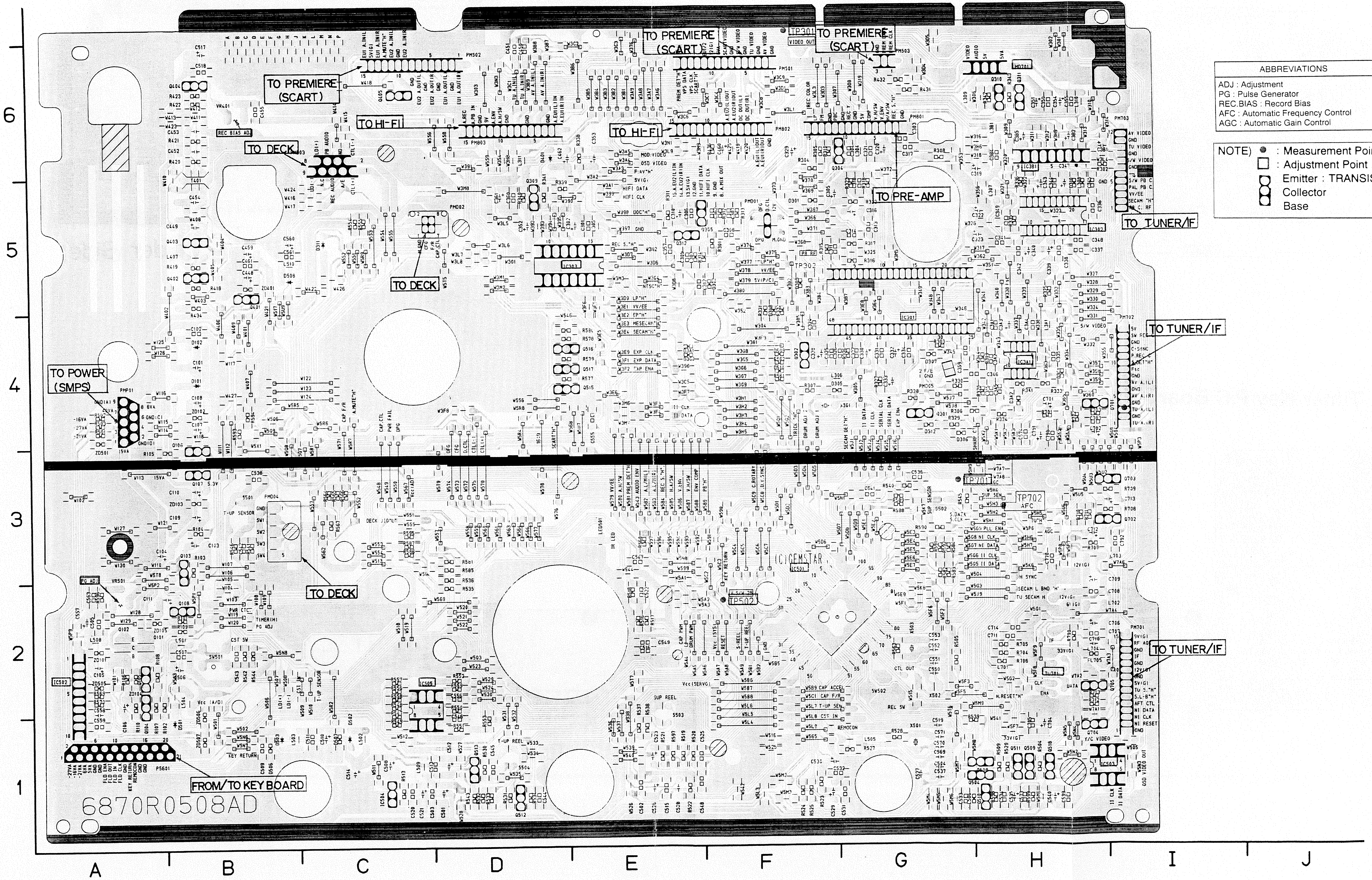

(Premiere)
5.54 | 5.54 | 5.52 | 0.00 | 5.59 | 5.61 | 5.61
14
10
IC903 (GL324)
1
5
5.58 | 5.58 | 5.57 | 12.34 | 5.49 | 5.50 | 5.50

★ Location Guide (Main P.C.Board)

C101	B4
C102	B4
C103	B3
C104	B3
C105	A2
C106	A2
C107	B4
C108	B4
C109	B3
C110	B3
C111	B2
C301	E5
C302	E5
C303	G6
C304	G6
C305	G5
C306	E5
C307	F5
C308	F5
C309	E5
C310	E5
C311	G5
C312	F5
C313	G5
C314	G5
C315	H4
C316	G5
C317	G6
C318	G5
C319	H6
C320	G6
C321	G6
C322	H5
C323	H5
C324	F4
C325	F4
C326	G4
C327	G4
C328	F4
C329	F6
C330	G4
C331	G4
C332	G4
C333	G4
C334	G4
C335	H4
C336	H5
C337	H5
C338	H5
C339	H5
C340	H5
C341	H5
C342	H5
C343	H5
C344	H5
C345	H5
C346	H4
C347	H5
C348	H5
C349	H5
C350	H6
C351	H6
C352	D5
C353	E6
C354	H6
C355	H6
C357	E5
C359	G4
C360	D5
C361	D5
C362	F5
C3A1	H4
C3A2	H4
C3A3	H4
C3A4	H4
C3A5	H4
C3B1	I6
C3B2	H6
C3B4	H6
C3B5	H6
C448	B5
C449	B5
C450	D6
C451	D6
C452	B6
C453	B6
C454	B5
C455	B6
C459	B5
C460	F6
C461	B5
C462	E6
C501	D1
C502	E1
C503	D1
C504	G1
C505	A2
C506	B2
C507	B2
C508	C1
C509	B1
C510	C1
C511	C1
C512	D1
C513	D1
C514	C1
C515	E1
C516	E2
C517	B6
C518	B6
C519	G1
C520	C1
C521	C1
C522	E2
C523	E1
C524	E1
C525	E1
C526	E1
C527	G1
C528	E1
C529	F1
C530	F1
C531	G1
C532	G1
C533	G1
C534	H1
C535	H1
C536	G3
C537	G1
C538	B3
C539	H1
C540	H1
C541	G3
C542	B3
C543	B2
C544	D1
C545	D1
C546	D2
C547	E3
C548	E1
C549	E2
C550	G2
C551	G2
C552	G2
C553	G2
C555	E4
C556	D2
C557	A2
C558	A2
C559	A1
C560	B5
C561	B5
C563	A2
C569	G1
C570	G1
C571	G1
C573	H1
C574	H4
C701	H4
C702	H4
C703	H4
C704	H1
C705	H1
C706	H2
C707	H2
C708	H2
C709	H3
C710	H2
C711	H2
C712	H3
C713	I3
C714	H2
C790	H4
C791	H4
C792	I3
D101	B4
D102	B4
D301	F5
D302	F5
D305	G4
D306	G4
D307	G4
D308	F5
D309	F5
D310	H5
D311	C5
D312	G4
D3A1	E4
D3A2	H4
D3C1	H4
D3C2	E4
D401	D6
D501	B2
D502	C1
D503	B1
D506	B1
D507	C1
D508	B5
D509	F4
D510	F4
FL705	H2
IC301	F5
IC302	H5
IC303	E5
IC3A1	H4
IC3B1	H6
IC502	A2
IC503	H1
IC504	C1
IC505	C2
L303	E5
L304	G6
L305	E5
L306	G4
L307	H5
L308	H5
L309	H6
L310	H6
L311	D6
L3A1	H4
L3B1	H6
L407	B5
L501	B2
L502	C1
L503	C1
L504	B2
L505	G1
L506	H1
L508	A2
L509	C1
L510	B5
L701	H2
L702	H2
L703	H3
L704	H2
LED501	E3
MD701	H6
P5601	A1
PM701	I1
PM702	I4
PM703	I5
PM801	G6
PM802	F6
PM803	D6
PMD01	F5
PMD02	C5
PMD03	C6
PMD04	B3
PMD05	G4
PMP01	A4
PMS01	F6
PMS02	D6
PMS03	G6
Q101	A2
Q102	A2
Q103	B3
Q104	A2
Q105	A2
Q106	B4
Q107	B3
Q108	B2
Q301	G4
Q302	F4
Q304	G6
Q305	F5
Q309	D5
Q310	H6
Q311	H6
Q312	E5
Q401	B5
Q402	B5
Q403	B5
Q404	B6
Q405	C6
Q504	H1
Q508	H1
Q509	H1
Q510	H1
Q511	H1
Q512	D1
Q513	D1
Q515	E4
Q516	E4
Q517	E4
Q518	H1
Q701	H4
Q702	I3
Q703	I3
Q704	H1
Q705	H2
R101	B2
R102	B2
R103	B3
R104	B3
R105	B4
R106	A2
R107	A2
R108	A2
R109	B2
R110	A2
R301	F5
R302	I6
R303	G4
R304	F6
R305	F6
R306	H4
R307	F4
R308	G6
R310	F6
R311	E5
R312	F5
R313	F5
R314	F5
R315	F5
R316	G5
R317	G5
R318	G5
R319	H4
R320	H4
R322	G5
R323	G5
R325	H5
R326	G4
R327	G4
R328	G4
R329	G4
R330	G4
R331	F5
R332	F5
R333	H4
R334	H4
R335	H5
R336	H5
R338	E6
R339	E5
R340	D5
R341	D5
R342	H6
R343	H6
R3A1	H4
R418	B5
R419	B5
R420	B6
R421	B6
R422	B6
R423	B6
R431	G6
R432	G6
R434	B5
R436	F6
R501	A4
R502	A4
R503	A4
R504	H1
R505	G2
R509	H1
R513	C1
R516	E2
R517	E2
R518	E2
R519	E1
R520	E1
R521	E1
R522	E1
R523	F1
R524	F1
R525	F1
R527	G1
R528	G1
R529	H1
R530	D1
R531	D1
R532	D1
R533	D1
R534	D1
R535	D2
R536	D3
R537	E1
R538	E1
R539	H1
R540	G3
R541	B3
R542	B2
R543	D1
R544	B2
R545	G3
R546	B3
R547	C2
R548	C2
R549	C1
R550	D2
R551	D1
R552	D2
R553	D2
R554	C5
R555	C5
R556	C2
R557	C2
R558	C2
R559	D2
R560	E3
R561	F4
R562	F4
R563	G2
R564	C3
R565	C3
R566	C3
R567	C3
R569	A2
R570	A2
R577	E4
R578	E4
R579	E4
R580	E4
R581	D3
R582	G3
R583	G3
R584	G3
R585	D3
R586	C3
R587	C3
R588	G3
R589	G3
R590	G3
R591	G3
R592	G3
R593	B4
R594	B4
R595	C3
R596	A2
R598	H1
R599	H1
R701	H4
R702	H4
R703	H4
R704	H2
R705	H2
R706	H2
R707	H3
R708	I3
R709	I3
R710	H3
R711	H3
R712	H2
R713	H2
S501	B3
S502	G3
S503	E1
S504	D1
SW501	B2
SW502	G2
T401	B6
TU701	H2
VR401	B6
VR501	A2
X301	F4
X501	G1
X502	G2
X503	G2
ZD101	A2
ZD102	B4
ZD103	B3
ZD104	A2
ZD105	A2
ZD401	B5
ZD501	A4
ZD505	A2
ZD506	B2
ZD507	B1

PRINTED CIRCUIT BOARD DIAGRAMS

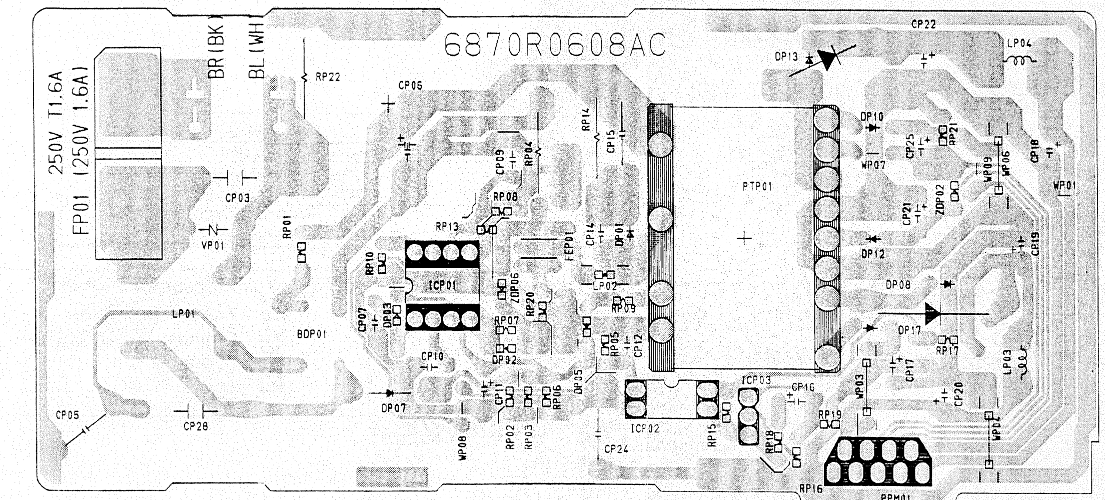
1. Main P.C.Board


TO PREMIERE (SCART)
TO PREMIERE (SCART)
TO PREMIERE (SCART)
TO HI-FI
TO HI-FI
TO DECK
TO DECK
TO DECK
TO PRE-AMP
TO TUNER/IF
TO TUNER/IF
TO TUNER/IF
TO POWER (SMPS)
FROM/TO KEY BOARD
REC BIAS ADJ
PG ADJ
TP301
TP302
TP502
TP701
TP702
AFC
IC(GEMSTAR)
6870R0508AD
6
5
4
3
2
1
A
B
C
D
E
F
G
H
I
J

ABBREVIATIONS
ADJ : Adjustment
PG : Pulse Generator
REC.BIAS : Record Bias
AFC : Automatic Frequency Control
AGC : Automatic Gain Control

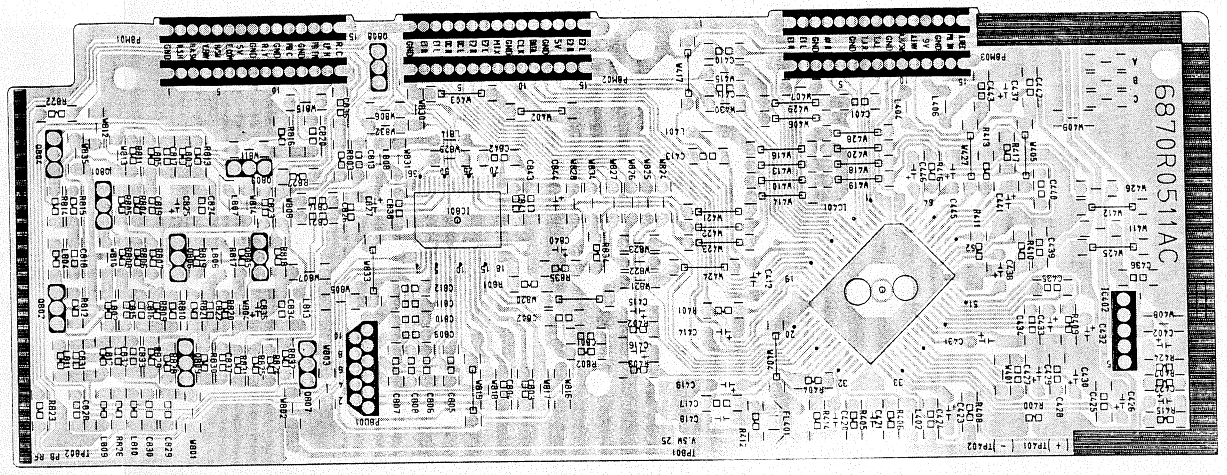
NOTE)
● : Measurement Point
☐ : Adjustment Point
Emitter : TRANSISTOR
Collector
Base

2. Power (SMPS) P.C.Board


6870R0608AC
250V T1.6A
FP01 (250V 1.6A)
BR(BK)
BL(WH)
PTP01
ICP01
PPM01

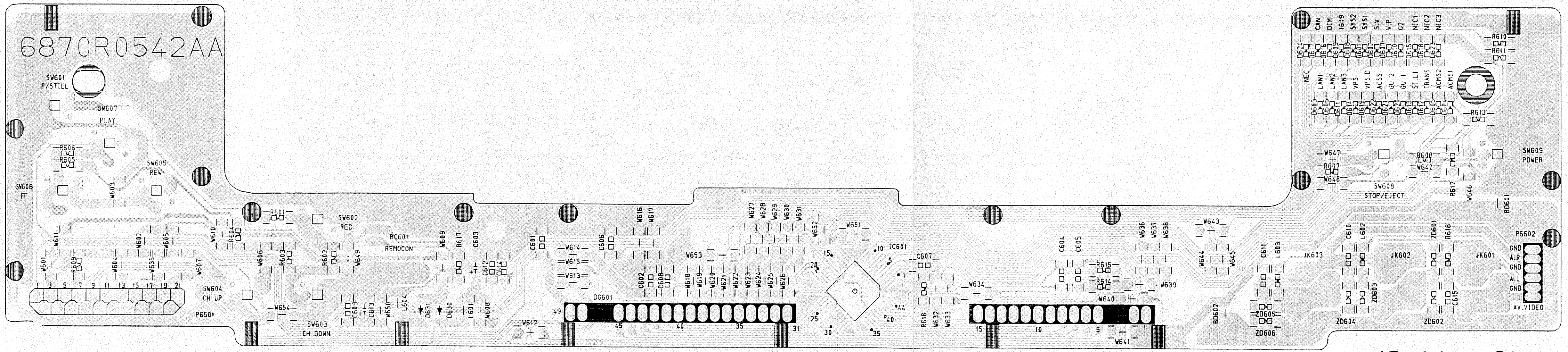
(Solder Side)

3. Pre-Amp P.C.Board


6870R0511AC

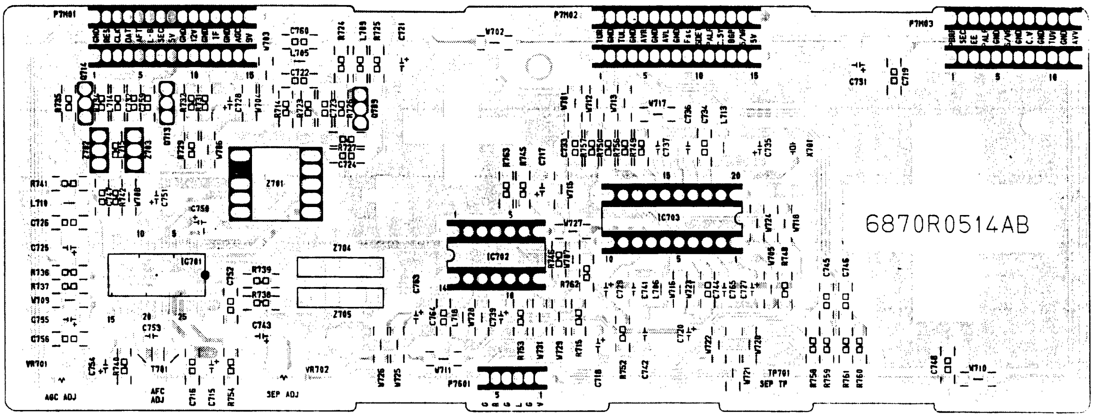
(Solder Side)

4. Timer/Key P.C.Board


6870R0542AA
SW601 P/STILL
SW607 PLAY
SW605 REW
SW606 FF
SW602 REC
RC601 REMOCON
SW604 CH UP
SW603 CH DOWN
P6501
DG601
IC601
SW609 POWER
SW608 STOP/EJECT
JK603
JK602
JK601
P6602
AV VIDEO

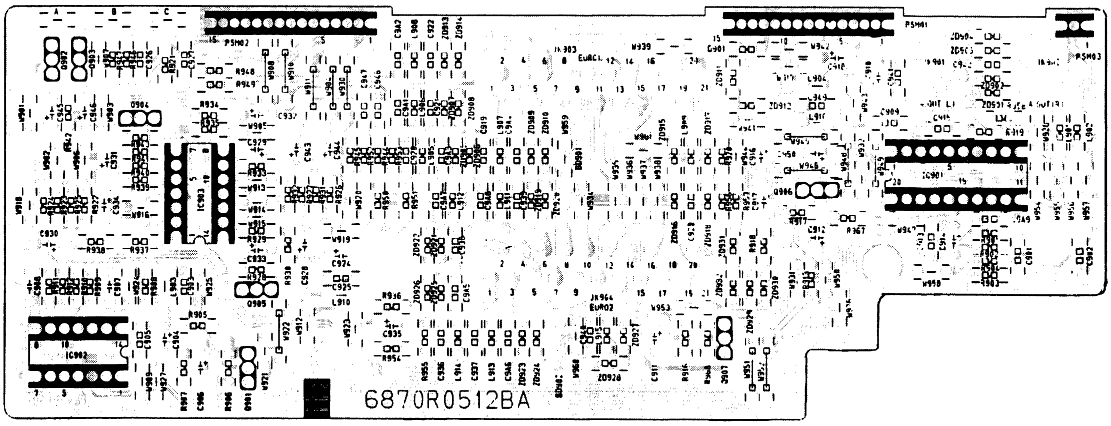
(Solder Side)

5. IF P.C.Board


P7M01
P7M02
P7M03
IC701
IC702
IC703
Z701
Z704
Z705
T701
VR701
VR702
AGC ADJ
AFC ADJ
SEP ADJ
P7601
TP701
6870R0514AB

(Solder Side)

6. Premiere P.C.Board


P5M02
P5M01
P5M03
IC903
IC901
IC902
EURO1
EURO2
6870R0512BA

(Solder Side)

MEMO

CONTENTS

FRONT LOADING MECHANISM DISASSEMBLY

- **Front Loading Mechanism Assembly Parts Location** 4-1
1. Front Loading Mechanism Assembly 4-2
2. Guide Cassette.......................................4-2
3. Bracket Assembly Side(R)/Top Plate.......4-2
4. Holder Assembly Cassette 4-2
5. Arm Assembly F/L 4-3
6. Spring Stopper/Spring Release 4-3
7. Holder Assembly Prism 4-3

DECK MECHANISM DISASSEMBLY

- **Deck mechanism Parts Location** 4-4
1. Auto Head Cleaner Assembly 4-5
2. Drum and Base Assembly 4-5
3. Drum Assembly
   3-1. Drum and Motor Sub Assembly 4-5
   3-2. Upper and Lower Drum Assembly ...4-6
4. A/C (Audio/Control) Head Assembly 4-6
5. FE (Full Erase) Head Assembly 4-6
6. Plate Up/Supply Main Brake/Take up Main Brake/Take up Soft Brake/Body prism Led Assembly 4-7
7. Tension Arm/Lever Assembly Tension.....4-7
8. TAB Lever...4-7
9. Supply Reel/Take up Reel Assembly.......4-8
10. Gear Pulley/Belt Capstan 4-8
11. Gear H1, H2/Lever H1 4-8
12. Arm Assembly Idler 4-8
13. Mode S/W...4-9
14. Bracket Capstan/Capstan Motor Assembly 4-9
15. Capstan Brake/Cam Bracket Assembly ..4-9
16. Cam Bracket/Lever Jog/Gear Jog 4-9
17. Gear Cam L/D 4-10
18. Gear P/S Plate Slider 4-10
19. Gear Assembly P2/P3 4-10
20. Base Assembly P2/P3...........................4-10
21. Guide Roller Assembly 4-11
22. Clutch Assembly S27............................4-11
23. Clutch Assembly T27............................4-11
24. Lever Assembly F/R & Arm F/R.............4-11
25. Base Tension 4-12
26. Holder Pinch Assembly 4-12
27. Pinch Arm Assembly 4-12
28. L/D Motor Bracket Assembly 4-12
29. Worm Wheel...4-13
30. L/D Motor Assembly & Worm L/D Motor & L/D Motor Bracket 4-13
31. Gear CNT 4-13
32. Gear Pinch..4-13
33. T/Up Arm Assembly..............................4-14
34. Gear Pinch Cam 4-14

MECHANISM ADJUSTMENT

- **Tools and Fixtures for Deck** 4-15
1. Mechanism and Mode Switch Alignment Check 4-16
2. Preparation for adjustment (To set VCR(VCP) to the Loading State without inserting a cassette).........4-17
3. Tension post position and Tension Adjustment..4-17
4. Checking Torque...................................4-18
5. Guide Roller Height Adjustment 4-19
6. Audio/Control (A/C) Head Adjustment...4-20
7. X-Value Adjustment 4-21
8. Adjustment after Replacing Drum Assembly (Video Heads) 4-22
9. Check The Tape Travel after Reassembling Deck Assembly..4-22
   9-1. Check Audio and RF Locking Time during Playback after CUE or REV 4-22
   9-2. Check the condition between the Audio and Video Sync. (Lip Sync).....................4-23
   9-3. Check for tape curling or jamming..........4-23
10. Maintenance/Inspection Procedure...............4-24

MECHANISM TROUBLESHOOTING GUIDE

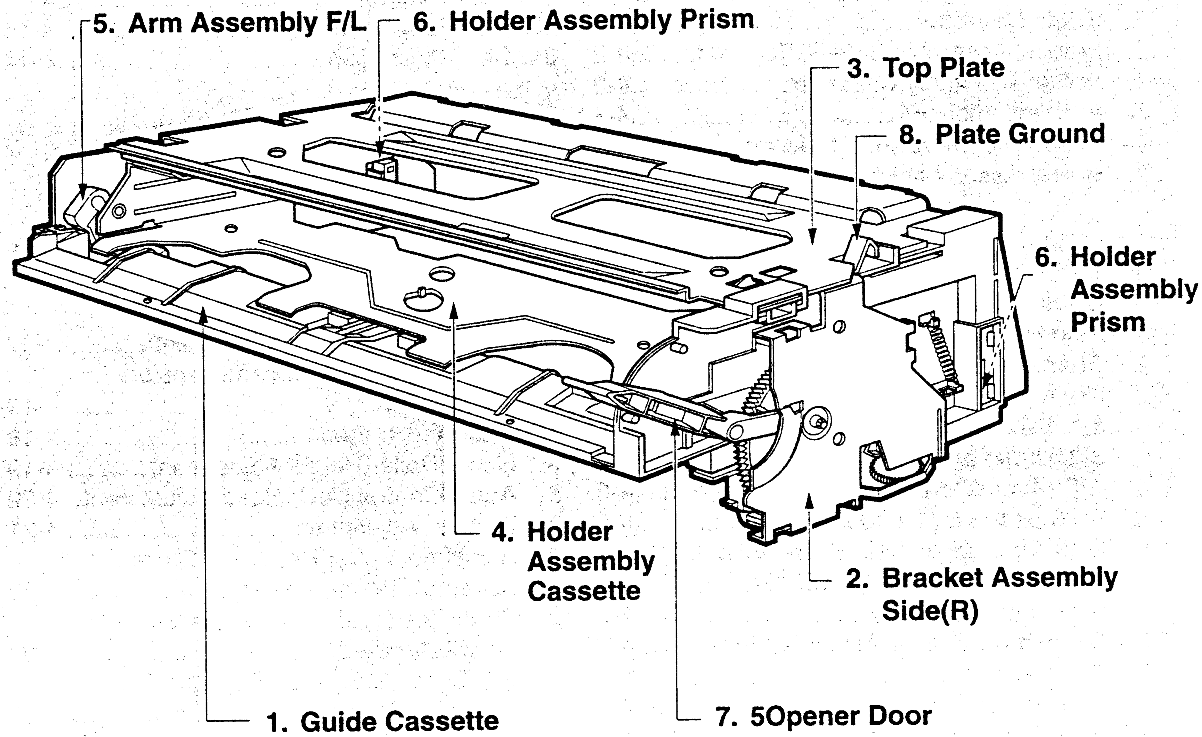
1. Deck Mechanism 4-27
2. Front Loading Mechanism 4-31

EXPLODED VIEWS

1. Moving Mechanism Section (1) 4-34
2. Moving mechanism Section (2) 4-36
3. Front Loading Mechanism Section 4-38

FRONT LOADING MECHANISM DISASSEMBLY

• Front Loading Mechanism Assembly, Parts Location


5. Arm Assembly F/L
6. Holder Assembly Prism
3. Top Plate
8. Plate Ground
6. Holder Assembly Prism
4. Holder Assembly Cassette
2. Bracket Assembly Side(R)
1. Guide Cassette
7. 5Opener Door

※ Component list below will be discribed as if the top and bottom covers, front panel and deck mechanism assembly have already been removed.

1. Guide Cassette
2. Bracket Assembly Side (R)
3. Top Plate
4. Holder Assembly Cassette
5. Arm Assembly F/L
6. Holder Assembly Prism
7. Opener Door
8. Plate Ground

FRONT LOADING MECHANISM DISASSEMBLY

1. Front Loading Mechanism Assembly (Fig. A-1)

1) Remove the Top and Bottom Covers and Front Panel.
2) Remove two screws(A).
3) Lift up the Front Loading Mechanism Assembly in the direction of arrow(B).

NOTE

When disassembling and reassembling:

① Give special attention to removal and to reassembly because two tabs(L), (R) are engaged.

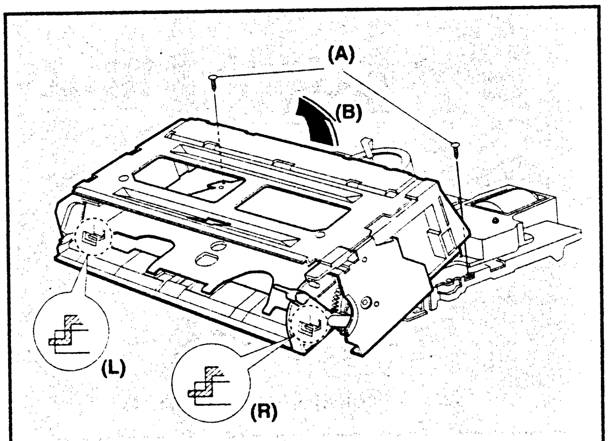


Fig. A-1 Front Loading Mechanism

2. Guide Cassette (Fig. A-2)

1) Push tab(R) of the Cassette Guide and disengage with Bracket Side(R) and push tab(L) of the cassette Guide which is engaged with Top Plate and remove it in the direction of arrow (B).

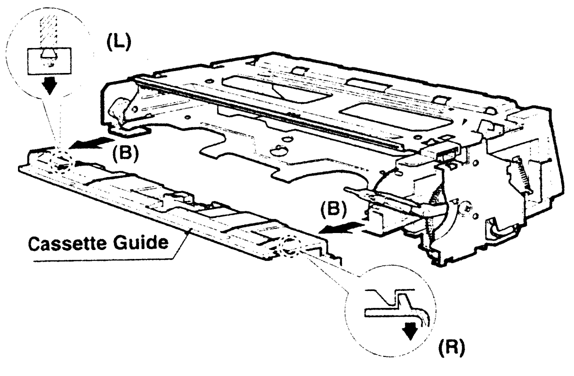


Fig. A-2 Guide Cassette

3. Bracket Assembly Side (R)/ Top Plate (Fig. A-3)

1) Push the tabs(L), (R) of Bracket Assembly Side(R) to disengage with the Top Plate and remove it in the direction of arrow(A).
2) The Top Plate can be removed by separating the Guide Cassette and the Bracket Assembly Side(R).

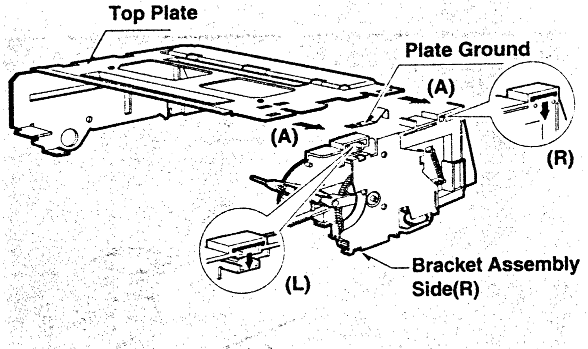


Fig. A-3 Bracket Assembly Side(R)/ Top Plate

4. Holder Assembly Cassette (Fig. A-4)

1) Separate the Bracket Assembly Side(R).
2) Push the two lever tabs(L), (R) down and separate the Holder Assembly Cassette and the Arm Assembly F/L from the Top Plate.

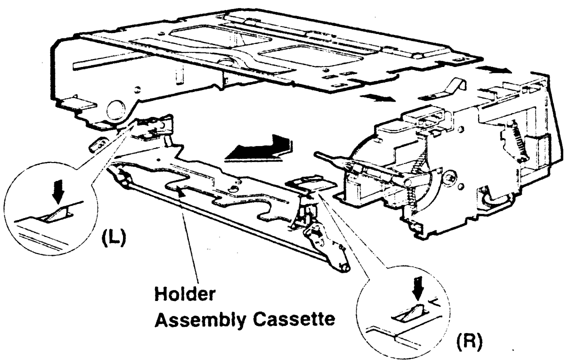


Fig. A-4 Holder Assembly cassette

SECTION 4 MECHANISM

FRONT LOADING MECHANISM DISASSEMBLY

5. Arm Assembly F/L (Fig. A-5)

1) Remove by pulling the Arm F/L(R) from the Bracket Holder(R) Boss in the direction of arrow(A).
2) Separate the Arm Assembly F/L from Cassette Holder Boss in the direction of arrow(B).

NOTE

When disassembling and reassembling:

① Be sure to remove the Arm F/L(R) first. If not the Arm Assembly F/L can be damaged.

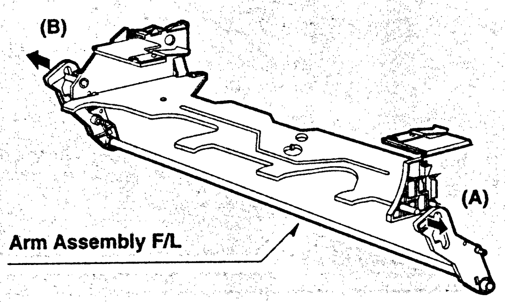

(B)
(A)
Arm Assembly F/L

Fig. A-5 Arm Assembly F/L

6. Spring Stopper/Spring Release (Fig. A-6)

1) Remove the Spring Release which is connected to the tabs(L), (R) of the Arm Release and Opener Lid.
2) Remove the Spring Stopper which is connected to the tabs(A), (B) of the Lever Stopper(R) and the Bracket Holder(R).

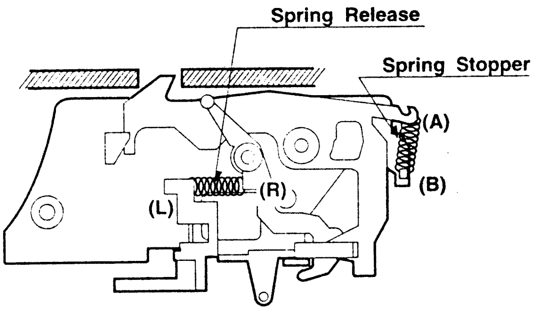

Spring Release
Spring Stopper
(A)
(L)
(R)
(B)

Fig. A-6 Spring Stopper/Spring Release

7. Holder Assembly Prism (Fig. A-7)

1) Separate the Holder Assembly Prism form the Top Plate by Pressing the tabs(L & R).
2) Remove by pushing two tabs(L), (R) is aligned with the Bracket Assembly side(R) in the direction of arrow.

NOTE

When disassembling and reassembling:

① Remove the Holder Assembly Prism with the required tools ((-) Type Drive).

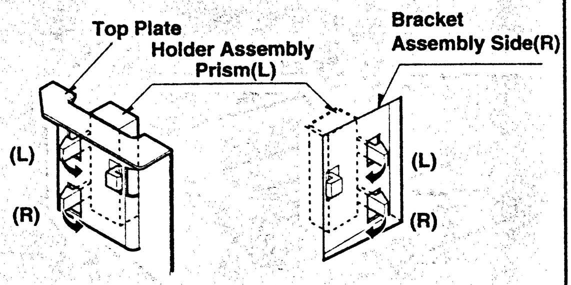
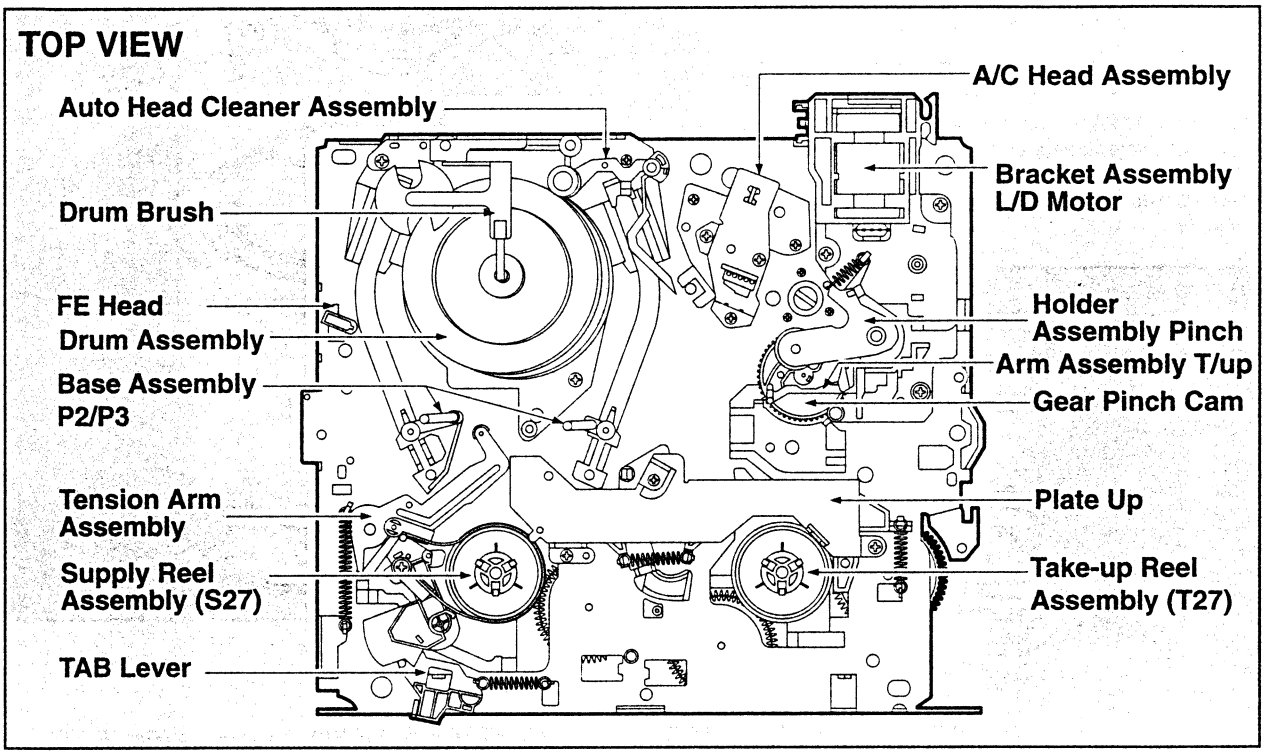
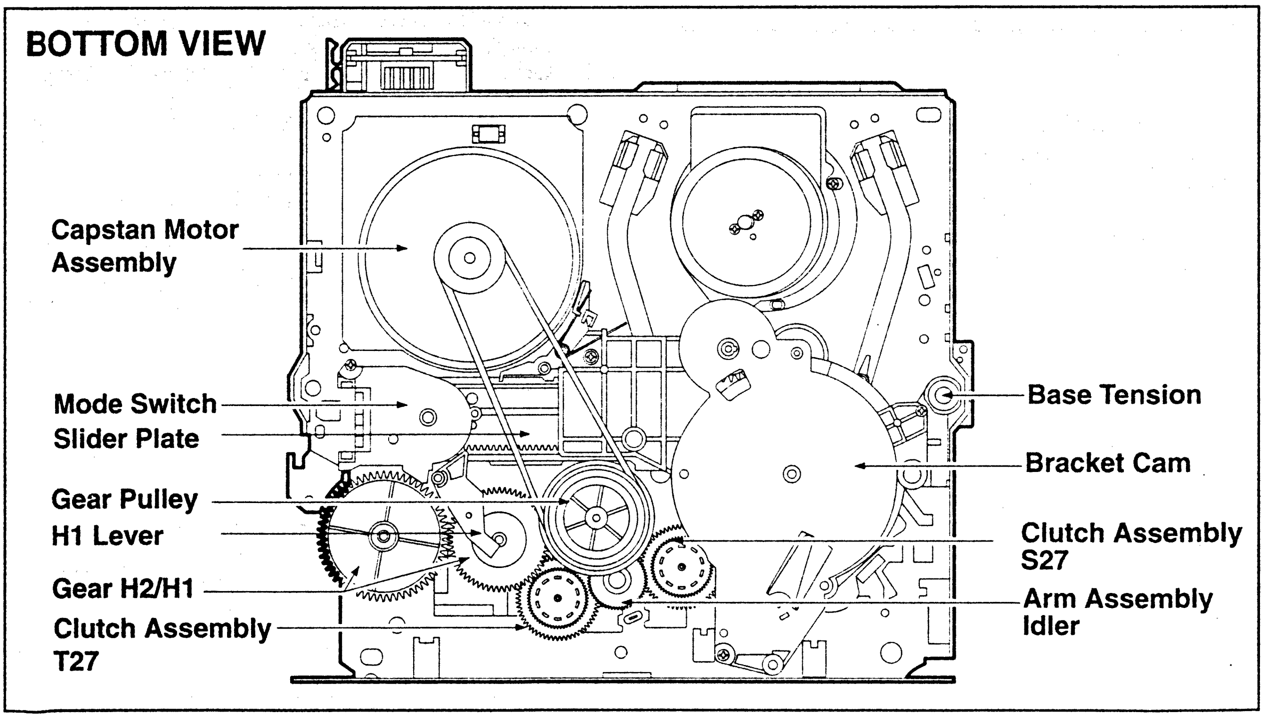

Top Plate
Holder Assembly Prism(L)
Bracket Assembly Side(R)
(L)
(R)
(L)
(R)

Fig. A-7 Holder Assembly Prism

DECK MECHANISM DISASSEMBLY

● Deck Mechanism Parts Location


TOP VIEW
Auto Head Cleaner Assembly
A/C Head Assembly
Drum Brush
Bracket Assembly L/D Motor
FE Head
Drum Assembly
Holder Assembly Pinch
Base Assembly P2/P3
Arm Assembly T/up
Gear Pinch Cam
Tension Arm Assembly
Plate Up
Supply Reel Assembly (S27)
Take-up Reel Assembly (T27)
TAB Lever


BOTTOM VIEW
Capstan Motor Assembly
Mode Switch
Base Tension
Slider Plate
Bracket Cam
Gear Pulley
H1 Lever
Clutch Assembly S27
Gear H2/H1
Arm Assembly Idler
Clutch Assembly T27

DECK MECHANISM DISASSEMBLY

1. Auto Head Cleaner Assembly (Fig. B-1)

(Optional Item)

1) Push the tab(A) of Auto Head Cleaner and remove the Cleaner Arm Assembly.

NOTES:

When disassembling and reassembling:

① Do not allow fingers or tools to touch the outside of the Drum.

② Be careful not to get any foreign substance on the Roller.

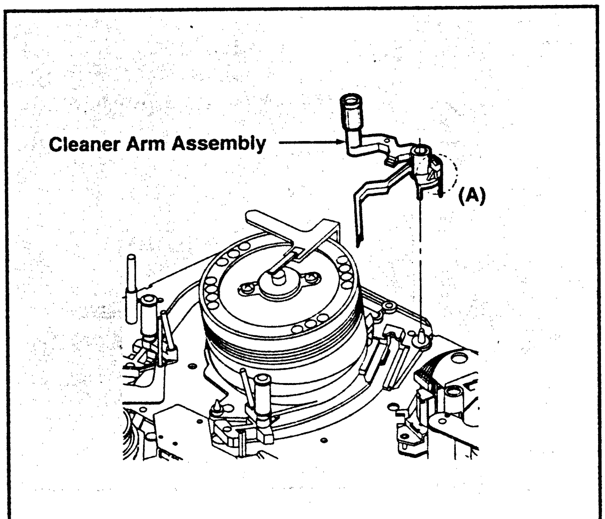


Fig. B-1 Auto head cleaner Assembly

2. Drum and Base Assembly (Fig. B-2)

1) Remove the Auto Head Cleaner Assembly. (option)
2) Remove three screws(A) and separate the Drum Assembly, Drum Base and the Drum Brush from the Deck Mechanism Assembly.
3) Remove three screws(B) on the back side and remove the Drum Assembly from the Drum Base.

NOTES:

When disassembling and reassembling:

① Do not touch the video tips with fingers or tools. Give special attention to disassembling and reassembling of Auto Head Cleaner Assembly.

② After assembling, adjust the tape transport system and Servo PG.

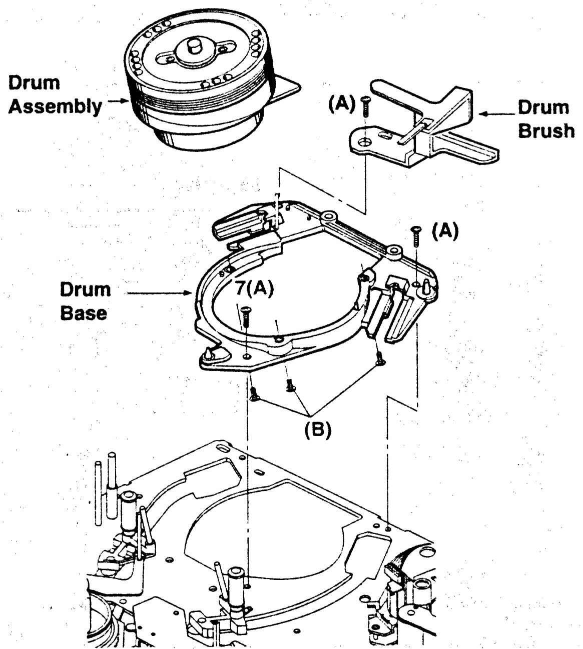


Fig. B-2 Drum and Base Assembly

3. Drum Assembly

3-1. Drum and Motor Sub Assembly (Fig. B-3-1)

1) Remove the Drum Base from the Deck Mechanism Assembly.
2) Separate the Drum Assembly from the Drum Base.
3) Remove two screws(A) and then remove the rotor.
4) Remove three screws(B) and then remove the stator.

NOTE

When disassembling and reassembling:

① Do not touch the video tips with fingers or tools.

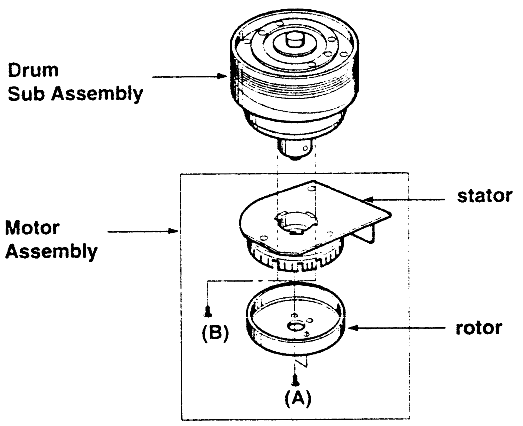


Fig. B-3-1 Drum and Motor Sub Assembly

DECK MECHANISM DISASSEMBLY

3-2. Upper and Lower Drum Assembly (Fig. B-3-2)

1) Remove the Drum Assembly and Drum Base from the Deck Mechanism Assembly.
2) Separate the Drum Assembly from the Drum Base.
3) Remove two screws(A).
4) Separate the Upper Drum Assembly from the Lower Drum Assembly.

NOTES:

When disassembling and reassembling:

① Do not touch the video head tips with fingers or tools.

② Make sure that the color (white) marked on the P.C.B of the Upper Drum coincides with the color (Green) marked on the Flange Assembly.

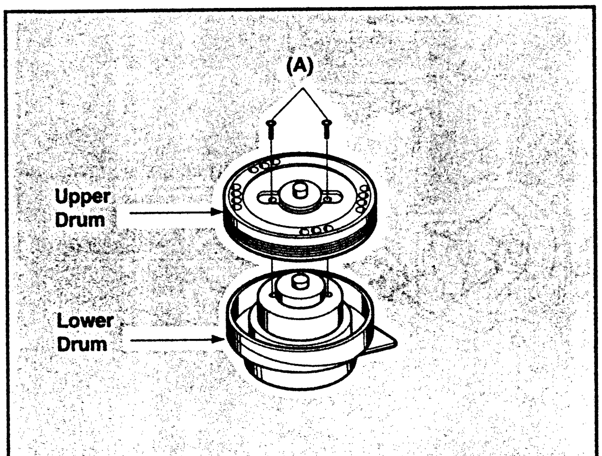


Fig. B-3-2 Upper/Lower Drum Assembly

4. A/C (Audio/Control) Head Assembly (Fig. B-4)

1) Unplug the A/C connector from the Loading Motor P.C.B.
2) Remove two screws(A) and remove the A/C Head Assembly from the Deck Mechanism Assembly.

NOTES:

When disassembling and reassembling:

① When assembling, the 3mm hole of the Base A/C should coincide to 3mm hole in the Chassis.

② Do not touch the A/C Head Tips with fingers or tools.

③ After reinstalling the Audio Control Head Assembly, adjust the Tilt, Azimuth and Height of A/C Head.

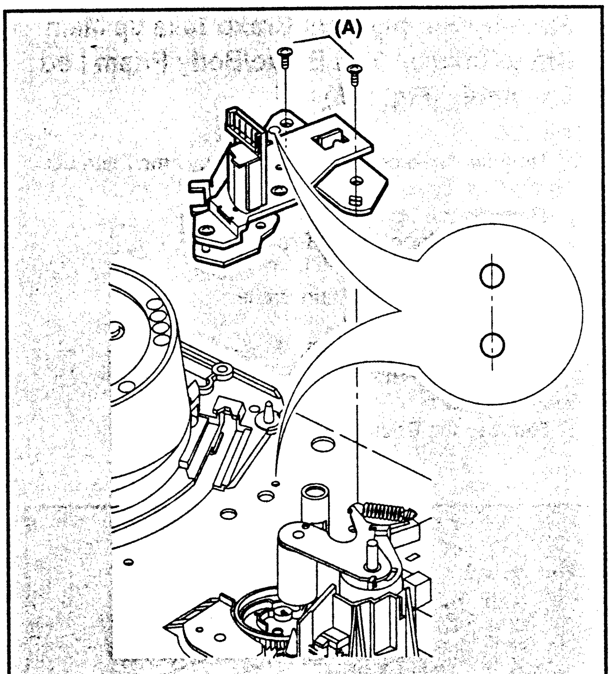


Fig. B-4 A/C Head Assembly

5. FE (Full Erase) Head Assembly (Fig. B-5)

(Optional Item)

1) Push two tabs(A) and remove the FE Head.

NOTE

When disassembling and reassembling:

① Be careful not to get any foreign substance on the FE Head.

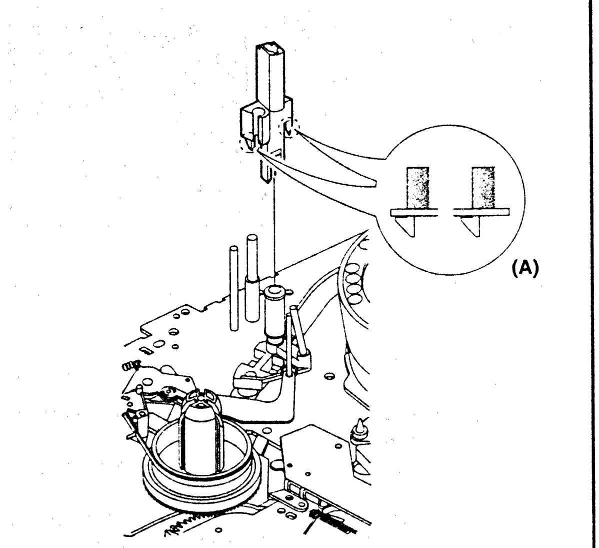


Fig. B-5 FE Head Assembly

DECK MECHANISM DISASSEMBLY

6. Plate Up/Supply Main Brake/Take up Main Brake/Take up Soft Brake/Body Prism Led Assembly (Fig. B-6)

1) Plate Up
   ① Remove three screws(A) and remove the Plate Up.
2) Supply Main Brake
   ① Remove the Spring MB.
   ② Lift up the Supply Main Brake.
3) Take-Up Main Brake
   ① Lift up the Take-Up Main Brake.
4) Take-Up Soft Brake
   ① Remove the Spring TSB.
   ② Remove the TSB.
5) Body Prism Led
   ① Remove the Body Prism Led.

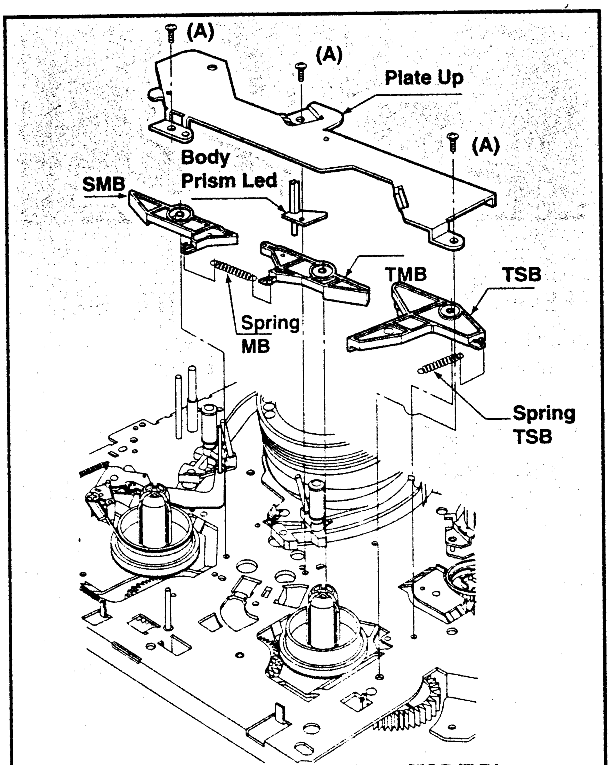

(A)
(A)
Plate Up
(A)
Body Prism Led
SMB
TMB
TSB
Spring MB
Spring TSB

Fig. B-6 Plate up/SMB/TMB/TSB/BPL

7. Tension Arm/Lever Assembly Tension (Fig. B-7)

1) Remove the Spring Tension.
2) Push the tab(A) of the Base Tension on the back cover of the Deck Mechanism Assembly outward and remove the Tension Arm Assembly.
3) Push the tab(B) on the back side of the Holder Band(A) and remove the Tension Arm Assembly.
4) Push two tabs(C) on the bottom side of the Lever Tension and Lift up the Lever Assembly Tension.

NOTES:

When disassembling and reassembling:

① (D) is engaged to the cam groove of the Gear Cam L/D and two·tabs(C) are engaged in the chassis. (care must be taken not to damage the two tabs when disassembling and reassembling)

② When disassembling, turn to the counterclockwise and lift up so that grease which may be on (D) is not transfered to the Reel Brake Drum.

③ When assembling, the 2.5mm hole of the Lever Assembly Tension should be aligned with the 2.5mm hole in the chassis.

④ After reassembling, adjust the Tension.

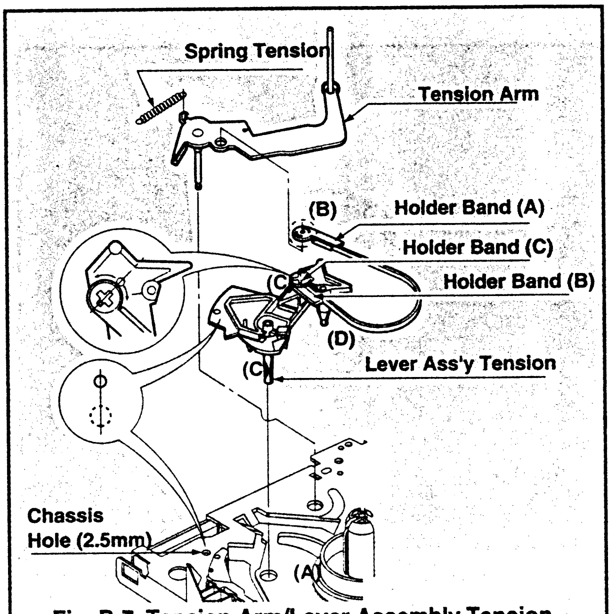

Spring Tension
Tension Arm
(B)
Holder Band (A)
Holder Band (C)
(C)
Holder Band (B)
(D)
(C)
Lever Ass'y Tension
Chassis Hole (2.5mm)
(A)

Fig. B-7 Tension Arm/Lever Assembly Tension

8. TAB Lever (Fig. B-8)

(Optional Item)

1) Remove the Lever Ass'y Tension.
2) Remove the Spring TAB.
3) Push the tab(A) on the bottom side of TAB Lever and remove the TAB Lever.

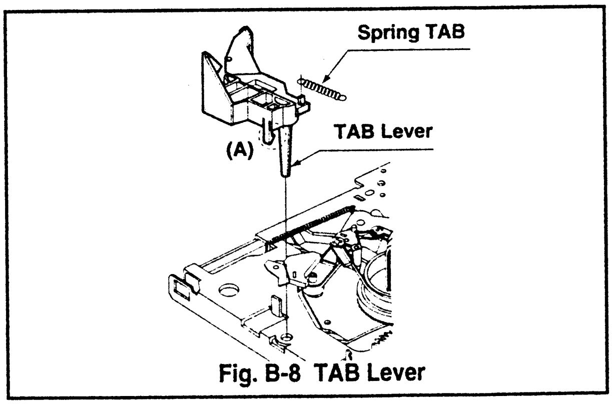

Spring TAB
TAB Lever
(A)

Fig. B-8 TAB Lever

DECK MECHANISM DISASSEMBLY

9. Supply Reel/Take Up Reel Assembly (Fig. B-9)

1) Lift up Reel(S), (T) after removing the Plate Up and Band Assembly.

NOTES:

① Be sure not to interchange the Take-up Reel and the Supply Reel.
② Do not allow the Brake Drum to come in contact with grease.

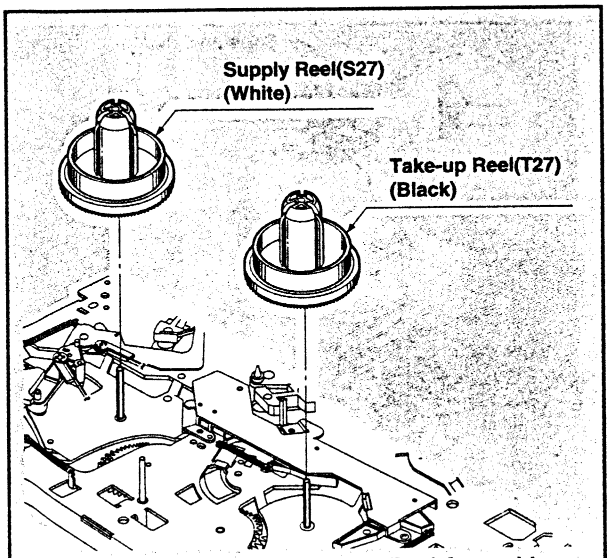

Supply Reel(S27)
(White)
Take-up Reel(T27)
(Black)

Fig. B-9 Supply Reel/Take-up Reel Assembly

10. Gear Pulley/Belt Capstan (Fig. B-10)

1) Turn over the Deck Mechanism Assembly.
2) Remove the Belt Capstan.
3) Remove the washer(A) and then lift up the Gear Pulley.

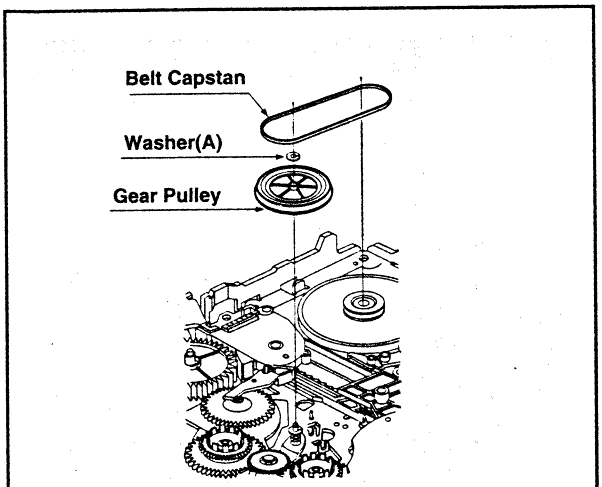

Belt Capstan
Washer(A)
Gear Pulley

Fig. B-10 Gear Pulley/Belt Capstan

11. Gear H1, H2/Lever H1 (Fig. B-11)

1) Push and lift up the hook(B) of Lever H1.
2) Remove the washer(A) and then lift up the Gear H1.
3) Lift up the Spring H1.
4) Push and lift up the hook(B) of the Gear H2.

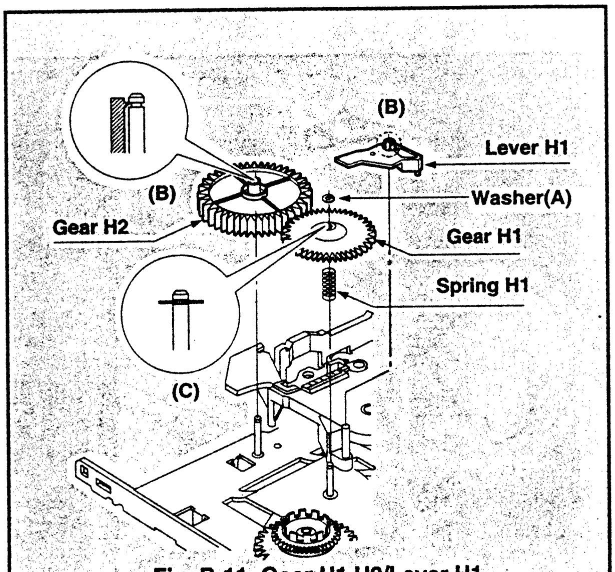

(B)
Lever H1
(B)
Washer(A)
Gear H2
Gear H1
Spring H1
(C)

Fig. B-11 Gear H1,H2/Lever H1

12. Arm Assembly Idler (Fig. B-12)

1) Lift up the Gear Pulley after removing the washer(A).
2) Lift up the Spring Up/D after removing the washer(B).
3) Lift up the Arm Assembly Idler.

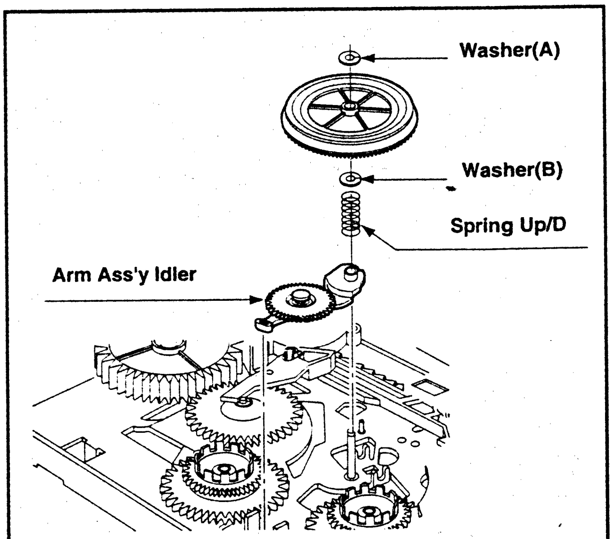

Washer(A)
Washer(B)
Spring Up/D
Arm Ass'y Idler

Fig. B-12 Arm Assembly Idler

DECK MECHANISM DISASSEMBLY

13. Mode S/W (Fig. B-13)

1) Lift up the Lever H1.
2) Remove the screw(A) and lift up the Mode S/W.

NOTE

① When assembling mode, the groove of Gear (∩) and Body (o) of the Mode Switch should be aligned.

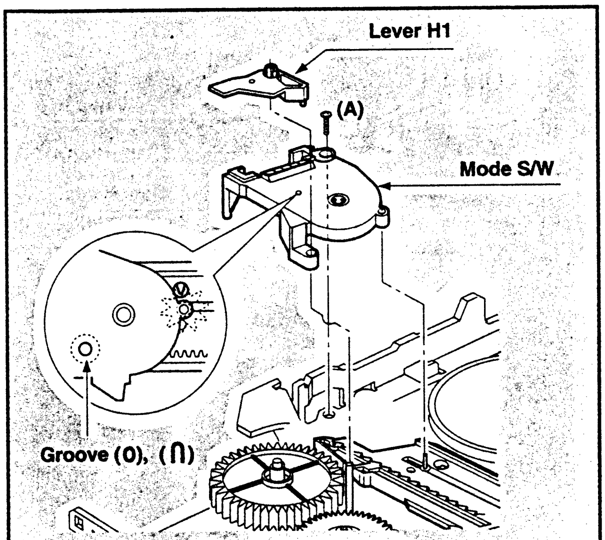

Lever H1
(A)
Mode S/W
Groove (0), (∩)

Fig. B-13 Mode S/W

14. Bracket Capstan/Capstan Motor Assembly (Fig. B-14)

1) Remove the Screw(A) and remove the Bracket Capstan.
2) Remove three Screws(B) on the top side and remove the Capstan Motor Assembly.

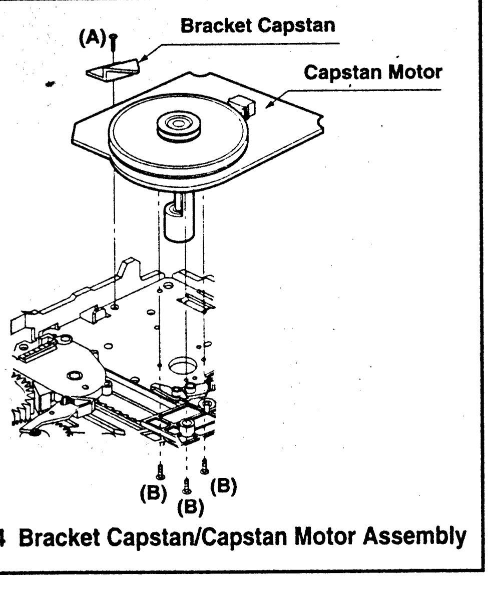

(A)
Bracket Capstan
Capstan Motor
(B)
(B)
(B)

Fig. B-14 Bracket Capstan/Capstan Motor Assembly

15. Capstan Brake (Optional Part)/CAM Bracket Assembly (Fig. B-15)

1) Disconnect the spring connected to Capstan Brake and push the tab of CAM Bracket and then remove the Capstan Brake Assembly.
2) Remove three screws(A).
3) Remove the CAM Bracket Assembly.

NOTE

① After assembling the Capstan Brake be sure to reconnect the spring.

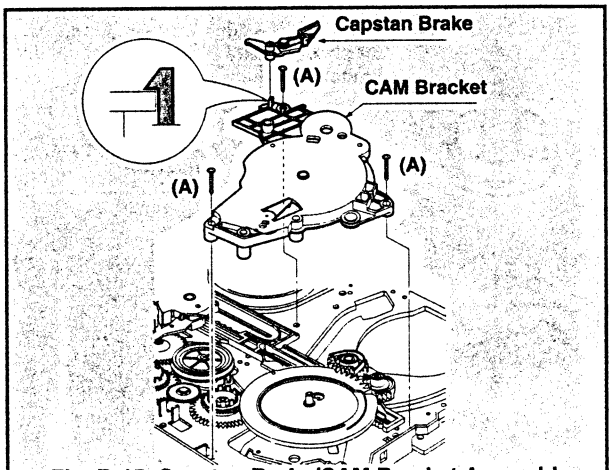

Capstan Brake
(A)
CAM Bracket
(A)
(A)

Fig. B-15 Capstan Brake/CAM Bracket Assembly

16. Cam Bracket/Lever Jog/Gear Jog (Fig. B-16)

1) Remove the Cam Bracket Assembly.
2) Remove the Spring Jog.
3) Push the hook(A) and remove the Lever Jog.
4) Push the hook(B) and remove the Gear Jog.

NOTE

① The tab(B) on the Gear Jog should be in groove of the Lever Jog.

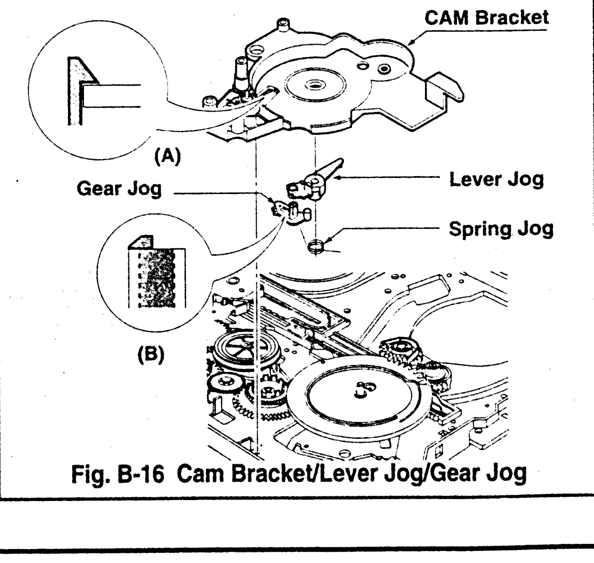

CAM Bracket
(A)
Gear Jog
Lever Jog
Spring Jog
(B)

Fig. B-16 Cam Bracket/Lever Jog/Gear Jog

DECK MECHANISM DISASSEMBLY

17. Gear Cam L/D (Fig. B-17)

1) Remove the Cam Bracket Assembly.
2) Remove the Gear Cam L/D.

NOTE

1) When assembling the Gear Cam L/D, the groove (/V\) of Plate Slider should coincide with to the groove (V) on the Gear Cam L/D.

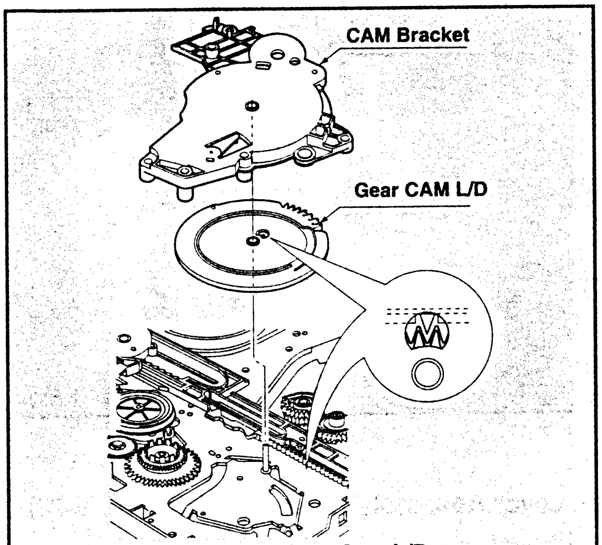


Fig. B-17 Gear Cam L/D

18. Gear P/S Plate Slider (Fig. B-18)

1) Remove two washers(C).
2) Remove the Plate Slider.
3) Remove the Gear PS.

NOTE

1) When the hole(A) of the Gear PS is aligned to the hole(B) of the chassis, the groove(V) of the Plate Slider should be aligned to the groove(/V\) of the Gear PS.

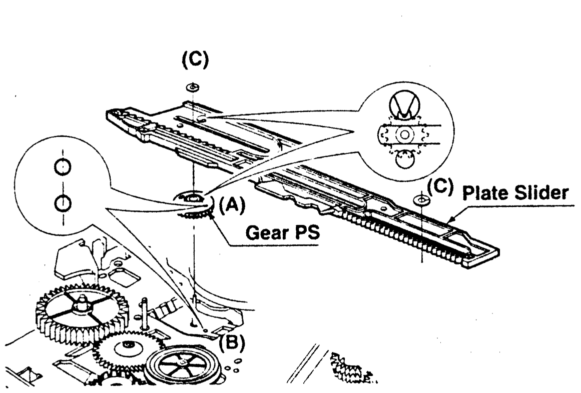


Fig. B-18 Gear PS/Plate Slider

19. Gear Assembly P2/P3 (Fig. B-19)

1) Remove the Plate Slider.
2) Remove by pushing one hook(B) on the top side of Gear Assembly P3.
3) Remove by pushing one hook(A) on the top side of Gear Assembly P2.

NOTES:

When disassembling and reassembling:

① The P2 and P3 Gear Assembly should not be interchanged.
② The groove(V), of Gear P2 should be aligned to the groove(/V\ ) of Gear P3.
③ Set the hole of Lever to the Boss of P2 and P3 Base Assembly.
(When assembling make sure that the Lever is not bent.)

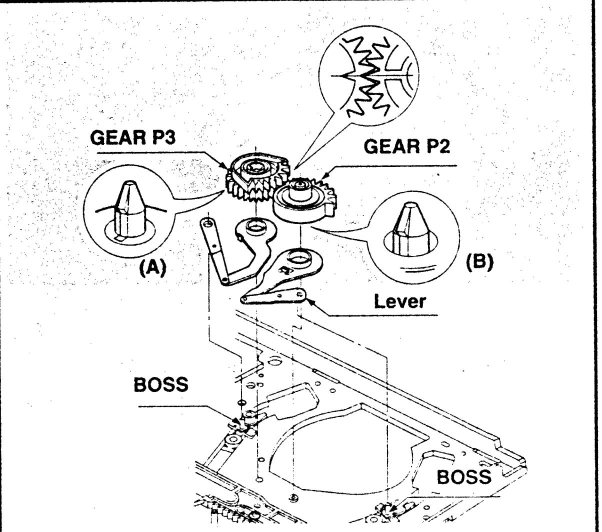


Fig. B-19 Gear Assembly P2/P3

20. Base Assembly P2/P3 (Fig. B-20)

1) Remove the P2/P3 Gear Assembly.
2) Remove the P2/P3 Base Assembly.

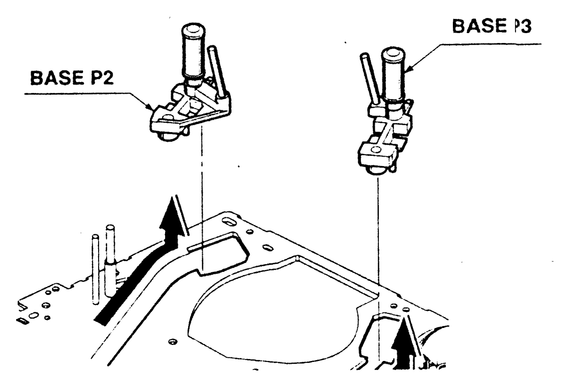


Fig. B-20 Base Assembly P2/P3

DECK MECHANISM DISASSEMBLY

21. Guide Roller Assembly (Fig. B-21)

1) Remove two screws(A).
2) Remove the Guide Roller From the Base P2/P3 by turning it.

NOTE

When disassembling and reassembling:

① The P2 and P3 Base should not be interchanged.

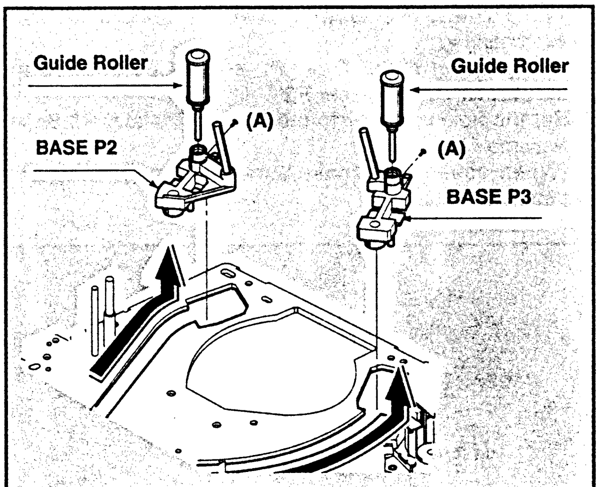

Guide Roller
Guide Roller
(A)
BASE P2
(A)
BASE P3

Fig. B-21 Guide Roller Assembly

22. Clutch Assembly S27 (Fig. B-22)

1) Remove the Gear Cam L/D and the Arm Assembly Idler.
2) Remove the washer(A).
3) Remove the Clutch Assembly S27.

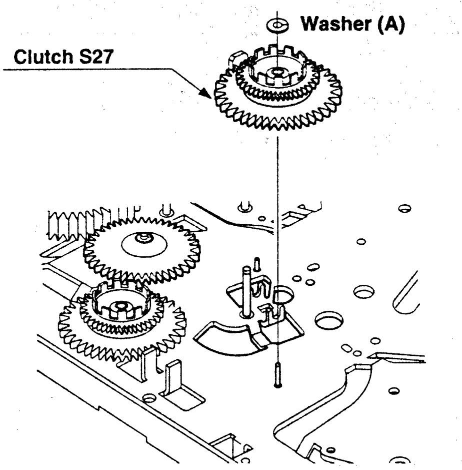

Washer (A)
Clutch S27

Fig. B-22 Clutch Assembly S27

23. Clutch Assembly T27 (Fig. B-23)

1) Remove the Gear H1 and Arm Assembly Idler.
2) Remove the washer(A).
3) Remove the Clutch Assembly T27.

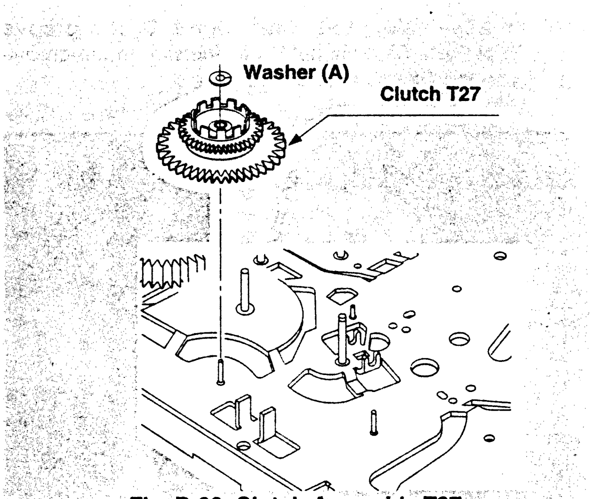

Washer (A)
Clutch T27

Fig. B-23 Clutch Assembly T27

24. Lever Assembly F/R & Arm F/R (Fig. B-24)

1) Remove the Plate Slider.
2) Remove the washer(A).
3) Remove the Lever Assembly F/R.
4) Remove the Arm Assembly Idler.
5) Remove the Arm F/R.

NOTE

1) When disassembling the Arm F/R should be horizontal.

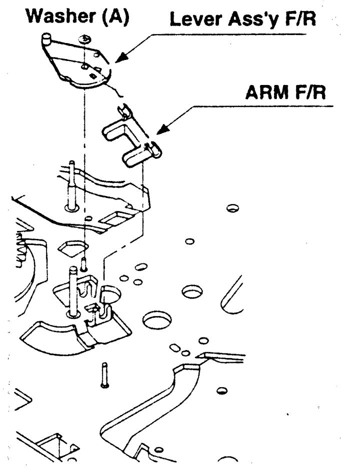

Washer (A)
Lever Ass'y F/R
ARM F/R

Fig. B-24 Lever Assembly F/R & Arm F/R

DECK MECHANISM DISASSEMBLY

25. Base Tension (Fig. B-25)

1) Remove the Bracket Assembly Cam/Bracket Cam.
2) Remove the Base Tension by pushing two tabs (A), (B).

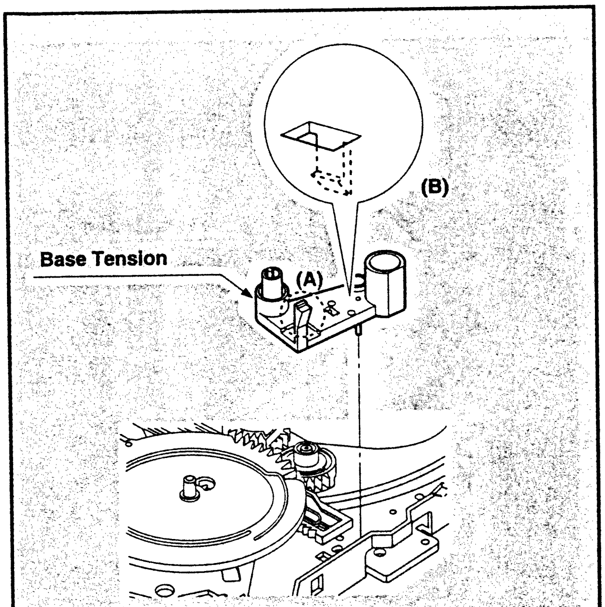

(B)
Base Tension
(A)

Fig. B-25 Base Tension

26. Holder Pinch Assembly (Fig. B-26)

1) Separate the Holder Pinch Assembly by pushing tab(A) on the L/D Motor Bracket in the direction of arrow (B).

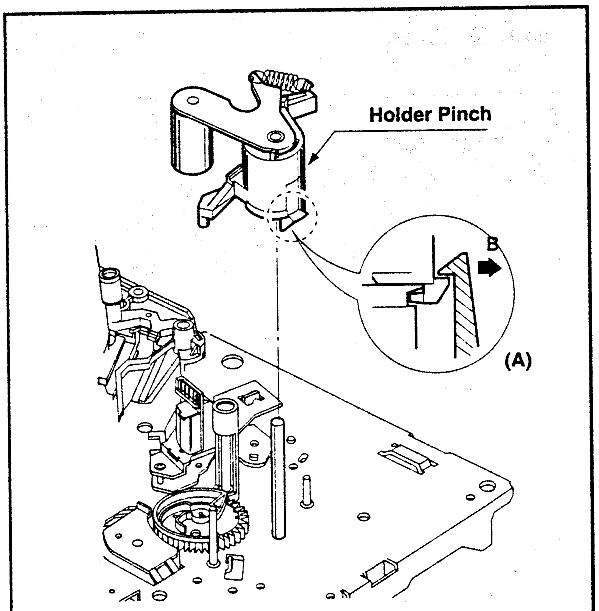

Holder Pinch
B
(A)

Fig. B-26 Holder Pinch Assembly

27. Pinch Arm Assembly (Fig. B-27)

1) Remove the Spring Pinch.
2) Remove the Pinch Arm Assembly by turning it counterclockwise.

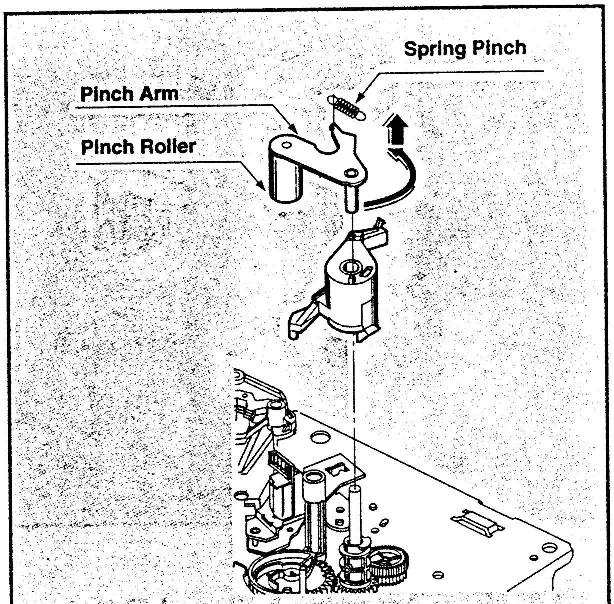

Spring Pinch
Pinch Arm
Pinch Roller

Fig. B-27 Pinch Arm Assembly

28. L/D Motor Bracket Assembly (Fig. B-28)

1) Remove three Screws(A).
2) Push the tabs(A) and remove the L/D Motor Bracket Assembly.

NOTES:

When assembling and disassembling:

① Make sure Grease from the Gear Pinch does not come in contact with the wing of the L/D Motor Bracket.

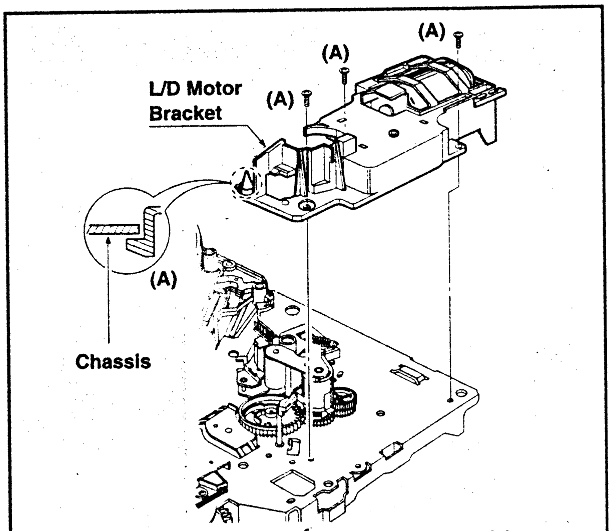

(A)
(A)
L/D Motor Bracket
(A)
(A)
Chassis

Fig. B-28 L/D Motor Bracket Assembly

DECK MECHANISM DISASSEMBLY

29. Worm Wheel (Fig. B-29)

1) Remove the L/D Motor Bracket Assembly.

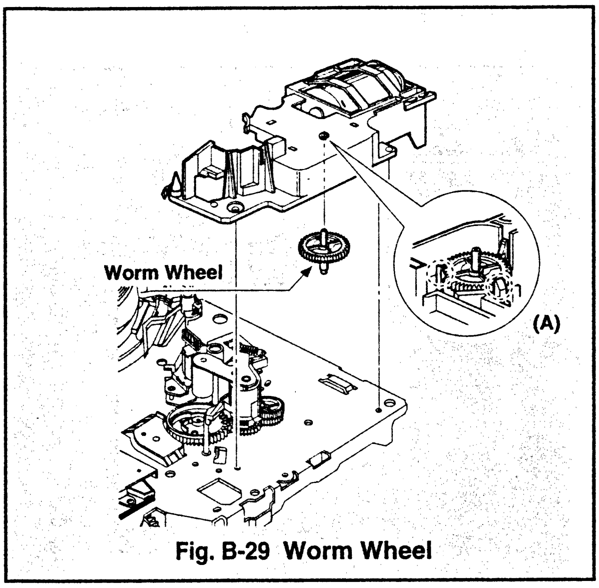


Fig. B-29 Worm Wheel

30. L/D Motor Assembly & Worm L/D Motor & L/D Motor Bracket (Fig. B-30)

1) Remove the L/D Motor Bracket Assembly.
2) Push two tabs(A) on the L/D Motor Bracket and then remove it.
3) Push the L/D Motor Assembly in lower direction and then remove.
4) Remove the Worm L/D Motor from the L/D Motor Assembly in the direction of arrow (A).
5) Remove the L/D Motor Assembly and the Worm L/D Motor and then L/D Motor Bracket is removed.

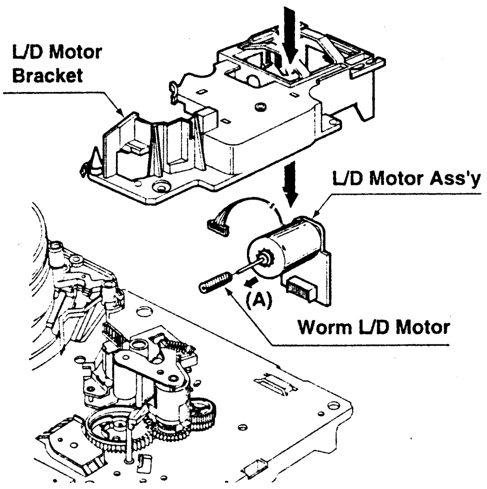


Fig. B-30 L/D Motor Assembly/ Worm L/D Motor/ L/D Motor Bracket

31. Gear CNT (Fig. B-31)

1) Remove the L/D Motor Bracket Assembly.
2) Remove the Pinch Arm Assembly.
3) Remove the Gear CNT.

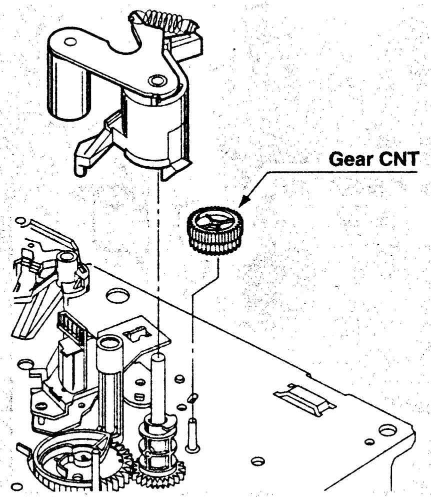


Fig. B-31 Gear CNT

32. Gear Pinch (Fig. B-32)

1) Remove the Pinch Arm Assembly.
2) Remove the Gear CNT.
3) Remove the Gear Pinch.
4) When reassembling, make sure that the two teeth with timing marks line up with the arrow at two o'clock on the Pinch Cam Gear.

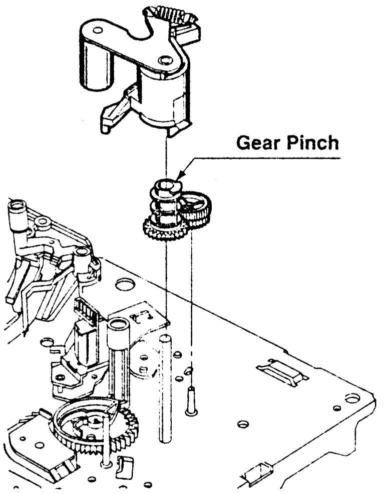


Fig. B-32 Gear Pinch

33. T/Up Arm Assembly (Fig. B-33)

1) Remove the L/D Motor Bracket Assembly.
2) Turn over the T/Up spring and separate the T/Up Arm Assembly.
3) Remove the spring.

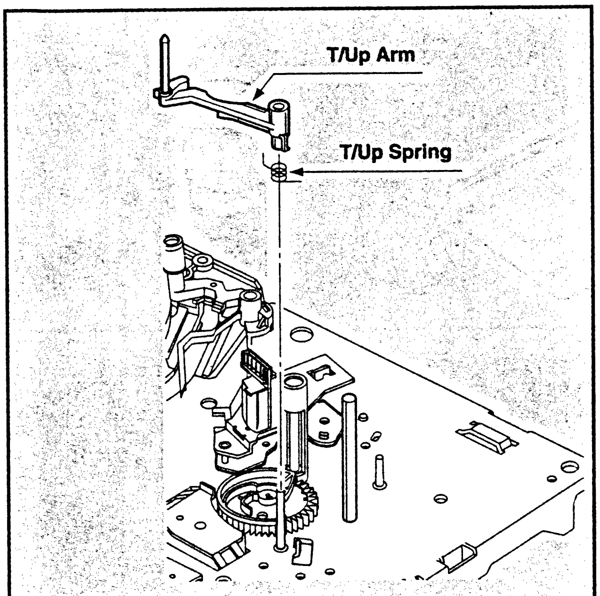


Fig. B-33 T/up Arm Assembly

34. Gear Pinch Cam (Fig. B-34)

1) Remove the T/Up Arm Assembly.
2) Remove by pushing one tab(A) on the bottom side of the Gear Pinch Cam.

NOTE

When disassembling and reassembling:

① The small hole on the Gear Pinch Cam and hole of chassis should be aligned.

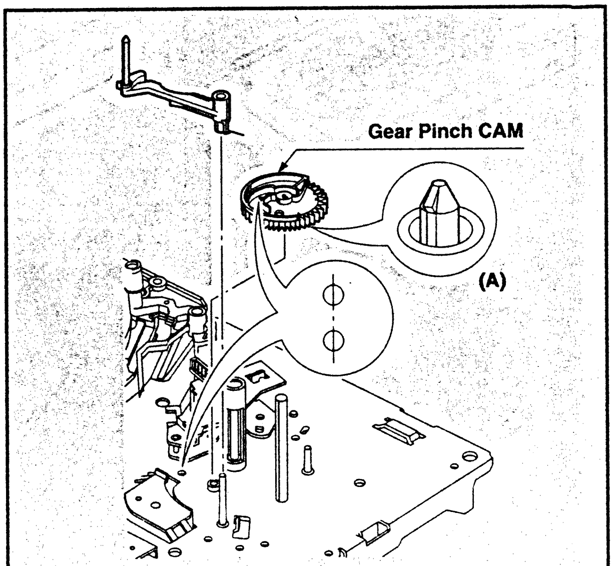
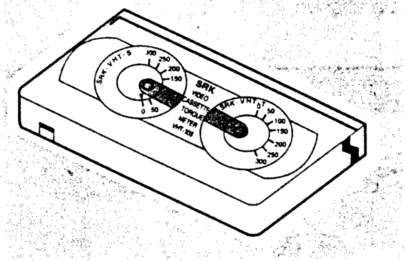
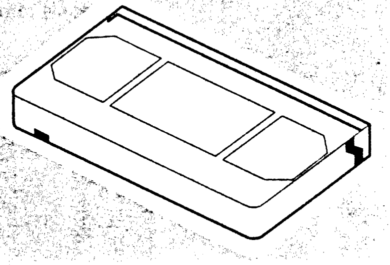
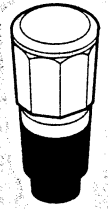
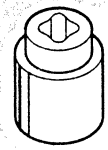
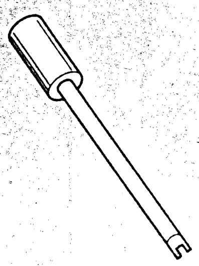
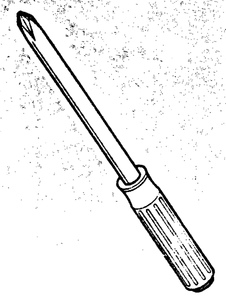


Fig. B-34 Gear Pinch Cam

MECHANISM ADJUSTMENT

● Tools and Fixtures for Deck

1. Cassette Torque meter **Parts No: D00-D006** 	**2. Alignment tape** **Parts No NTSC: DTN-0001** 	**3. Torque gauge** **Parts No: D00-D002** 
4. Torque gauge adaptor **Parts No: D09-R001** 	**5. Post height adjusting driver** **Parts No: DTL-0005** 	**6. + Type driver (5mm)** **Obtain locally** 

MECHANISM ADJUSTMENT

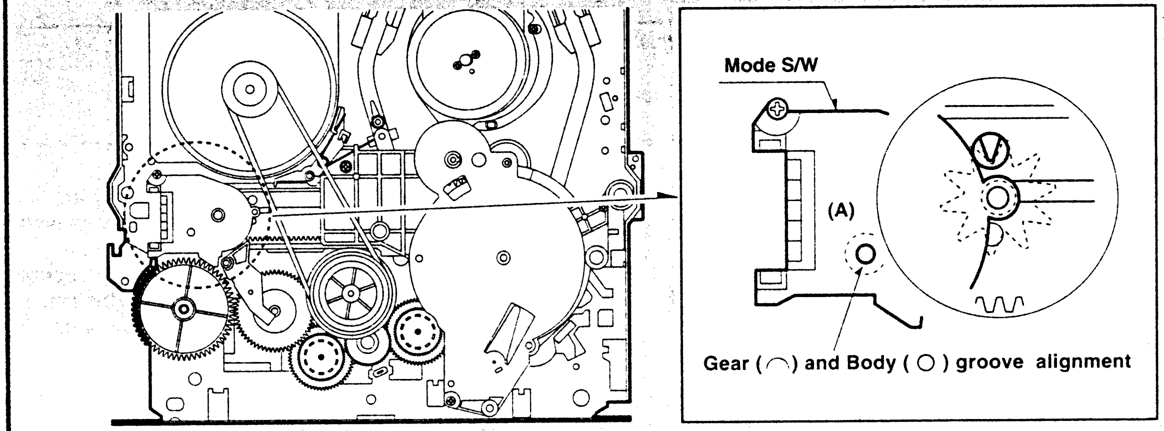
1. Mechanism and Mode Switch Alignment Check

Purpose: To determine if the mode switch and mechanism are in the correct position, when a tape is ejected from the loading mechanism.

Test Equipment / Fixture	Test Conditions VCR (VCP) State	Check Point
• Blank tape	• Eject Mode (with cassette ejected)	• Mechanism and Mode Switch Position

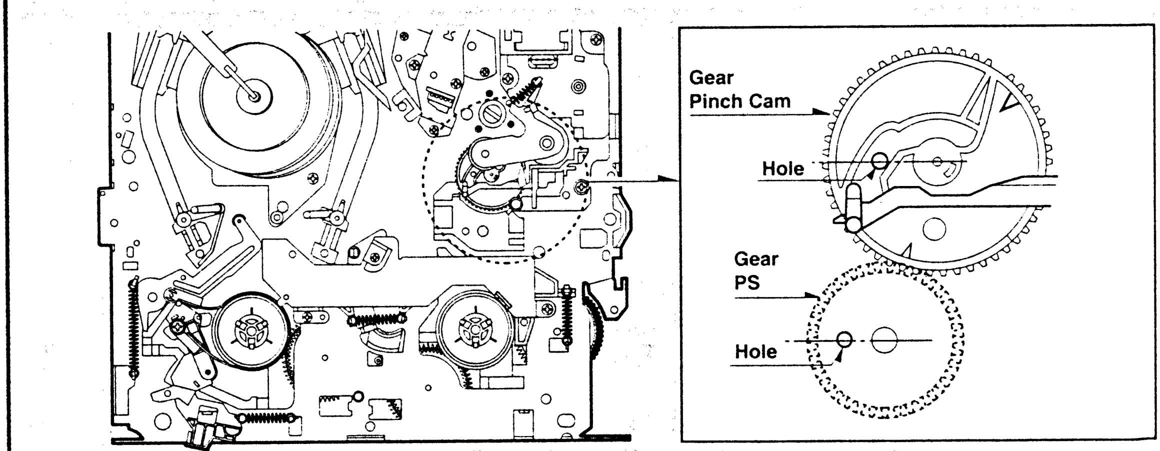
1) Turn power on and eject the cassette by pressing the eject button.
2) Remove the top and bottom covers.
3) Visually check the alignment of the Pinch Cam gear and PS gear holes, line up with holes in the chassis (figure C-2).
4) If the gears in step 3 do not align as indicated, then rotate the shaft of the loading motor to either the clockwise or counterclockwise direction until alignment does occur.
5) Turn the unit over and remove the main P.C.B thus exposing the bottom side of the deck mechanism.
6) Check the alignment of the mode switch as illustrated in figure C-1, (A).
7) If the alignment is incorrect then remove the mode switch and align as shown in figure C-1 with out changing the position of the Pinch Cam gear and PS gear.
8) Remount the mode switch and main P.C.B assembly and check operation.

CHECK DIAGRAM



BOTTOM VIEW

Fig. C-1



TOP VIEW

Fig. C-2

MECHANISM ADJUSTMENT

2. Preparation for Adjustment (To set VCR (VCP) to the loading state without inserting a cassette.)

1) Unplug the Power Cord from the AC outlet.
2) Separate the Top Cover and Front Loading Mechanism.
3) Plug the Power Cord into the AC outlet.
4) Turn the VCR on and push the tact switch in the P.C.B. Assembly.
   The VCR can accept inputs for each mode in this case. However the rewind and review operation cannot be performed for more than a few seconds because the take-up reel table is in the stop state and reel pulses cannot be detected.

NOTE

Cover the holes in the end sensors with black tape to prevent a light leak.

NOTES:

Always return the VCR(VCP) to the Front Loading Mechanism Assembly State in the following order after the above operations have been performed.

1) Press the Eject button after turning the power ON.
2) Wait for about 10 seconds until searching out the assembly position.
3) Assemble the Front Loading Mechanism and connect the Front Loading Mechanism Connector.
4) Refer to the "Front Loading Mechanism Disassembly" Section.

3. Tension Post Position and Tension Adjustment

Purpose: To insure uniform tape contact with the video head by maintaining constant tape tension.

Test Equipment / Fixture	Test Conditions VCR(VCP) State	Adjustment Point
• Cassette Torque Meter (For play 100g/cm)	• Position Adjustment: Play without a cassette • Tension Check: Play	• Holder Band B and C

Position Adjustment

1) Remove cassette.
2) Adjust the position of tension post in accordance with figure C-3.

NOTE

Align the Tension Post (2mm) to the hole in the Chassis (2.5mm).

Tension Adjustment

1) Turn on VCR and load the cassette torque meter.
2) Press the play button and observe the torque tension on the supply reel (spec. 37g/cm+5g/cm).
3) If torque is out of spec. then use a Phillips screw driver and move the screw head located in the center of the B and C band hold; to either the right or left until correct torque is indicated.

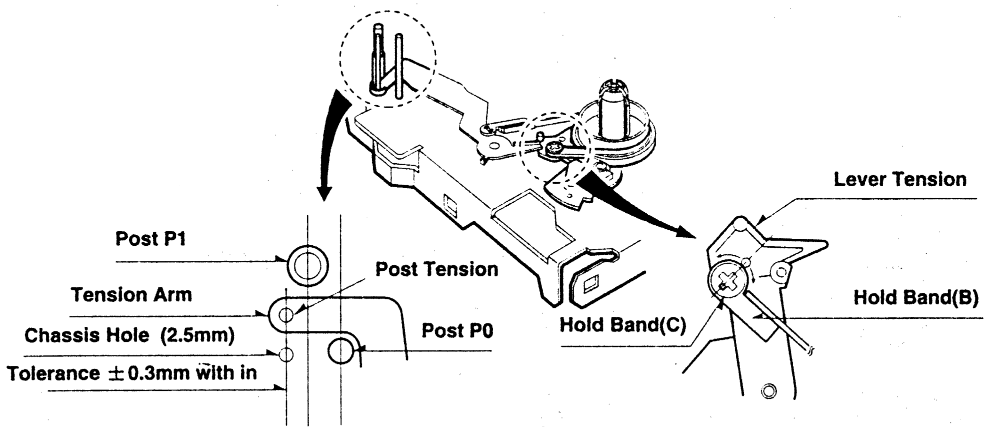


Fig. C-3

4. Checking Torque

Purpose: **To insure smooth transport of the tape during each mode of operation. If tape transport is abnormal, then check the torque as indicated by the chart below.**

Test Equipment / Fixture	Test Conditions VCR(VCP) State
• Torque Gauge(600 g/cm ATG) • Torque Gauge Adaptor • Cassette Torque Meter	• Set the VCR to each operating mode without inserting a cassette. (See '2. Preparation for Adjustment'. Page 4-17)

Item	Mode	Test Equipment	Measurement Reel	Measurement Values
Slack Removal Torque	Unloading	Cassette Torque Meter	Supply Reel	More than 140g/cm
Fast Forward Torque	Fast Forward	Cassette Torque Gauge	Take-Up Reel	More than 600g/cm
Rewind Torque	Rewind	Cassette Torque Gauge	Supply Reel	More than 600g/cm
Play Take-Up Torque	Play	Cassette Torque Meter	Take-Up Reel	35~55g/cm
Review Torque	Review	Cassette Torque Meter	Supply Reel	140~190g/cm

Checking Method:
The Values are measured by using a torque gauge and torque gauge adaptor with the torque gauge affixed.

NOTE

The torque reading to measure occurs when the tape abruptly changes direction from fast forward or rewind mode, when quick braking is applied to both reels.

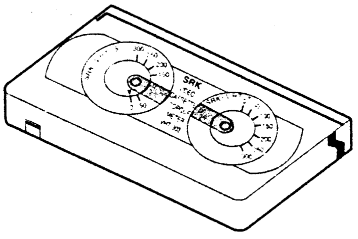


Fig. C-5

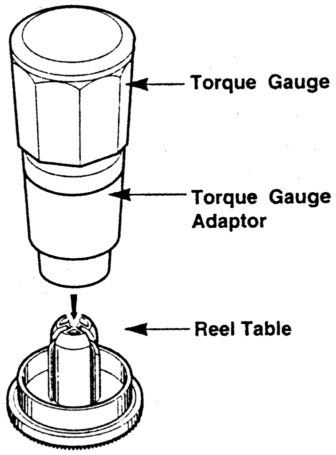


Fig. C-4

MECHANISM ADJUSTMENT

5. Guide Roller Height Adjustment

Purpose: To regulate the height of the tape so that the bottom of the tape runs along the tape guide line on the lower drum.

A. Preliminary Adjustment

Test Equipment / Fixture	Test Conditions VCR (VCP) State	Adjustment Point
• Post Height Adjusting Driver • Hexagonal Wrench or Allen Wrench Phillips screw driver	• Allows a good tape to play normally in spite of a damaged guide roller.	• Guide Roller Height Adjustment screws on the Supply and Take-Up Guide Rollers.

Adjustment Procedure

1) Perform the precise adjustment(See below B).
2) If the Guide Roller is damaged, loosen the Guide Roller retaining screw and replace the Guide Roller.
3) Adjust the height of P2, P3 so that TAPE is adjacent to the guide line.

ADJUSTMENT DIAGRAM

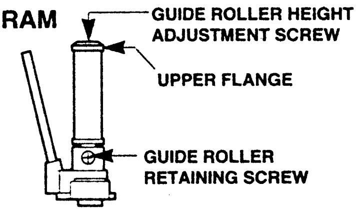

GUIDE ROLLER HEIGHT ADJUSTMENT SCREW
UPPER FLANGE
GUIDE ROLLER RETAINING SCREW

Fig. C-5-1

B. Precise Adjustment

Test Equipment / Fixture	Test Equipment Connection Points	Test Conditions VCR (VCP) State	Adjustment Point
• Oscilloscope • Alignment Tape • Post Height Adjusting Driver	• CH-1: PB RF Envelope • CH-2: NTSC: SW 30Hz PAL : SW 25Hz • Head Switching Output Point • RF Envelope Output Point	• Play an alignment tape	• Guide Roller Height Adjustment Screws.

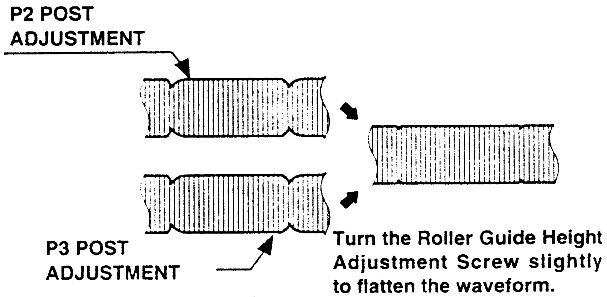
Adjustment Procedure

1) Play an alignment tape after connecting the probe of the oscilloscope to the RF Envelope Output Test Point and Head Switching Output Test Point.
2) Tracking Control (in PB mode): Center position (When this adjustment is performed after the drum assembly has been replaced, set the tracking control so that the RF output is maximum.)
3) Height adjustment screw: Flatten the RF waveform. (Fig. C-5-2)
4) Turn (Move) the tracking control (in the Playback mode) clockwise and counterclockwise. (Fig. C-5-3))
5) Check that any drop of RF output is uniform at the start and end of the waveform.

CAUTION

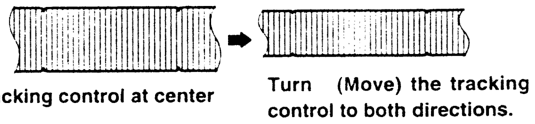
If the adjustment is excessive or insufficient the tape will jam or fold.

Waveform Diagrams



Turn the Roller Guide Height Adjustment Screw slightly to flatten the waveform.

Fig. C-5-2

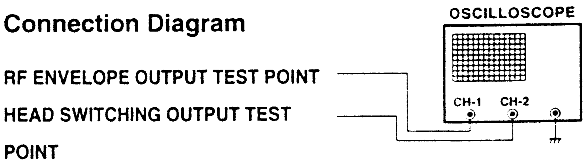


Tracking control at center

Turn (Move) the tracking control to both directions.

Fig. C-5-3

Connection Diagram


OSCILLOSCOPE
CH-1
CH-2
RF ENVELOPE OUTPUT TEST POINT
HEAD SWITCHING OUTPUT TEST POINT

6. Audio/Control (A/C) Head Adjustment

Purpose: To insure that the tape passes accurately over the audio and control tracks in exact alignment in both the record and playback modes.

A. Preliminary Adjustment (Height and tilt adjustment)

Perform the Preliminary adjustment, when there is no Audio Output signal with a blank tape.

Test Equipment / Fixture	Test Conditions VCR(VCP) State	Adjustment Points
• Blank Tape • Screw Driver(+) Type 5mm	• Play the blank tape (CTL Tape)	• Tilt Adjustment Screw(C) • Height Adjustment Screw(B) • Azimuth Adjustment Screw(A)

Adjustment Procedure /Diagrams

1) Initially adjust the A/C head assembly as shown in figure C-6-1, by using the height adjustment screw(B).
2) Play a blank tape and observe if the tape passes accurately over the A/C head without tape curling or folding.
3) If folding or curling does occur then adjust the Tilt adjusting screw(C) while the tape is running to resemble figure C-6-3.
4) Confirm that the tape passes over the A/C head assembly as indicated by proper audio reproduction and proper tape counter performance.

NOTE

Ideal A/C head height occurs, when the tape runs between 0.2~0.25mm above the bottom edge of the A/C head core.

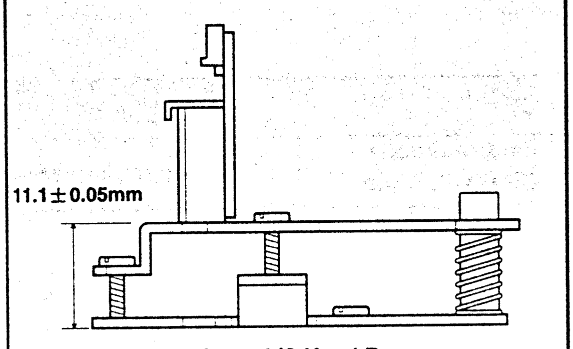


Fig. C-6-1 A/C Head Base

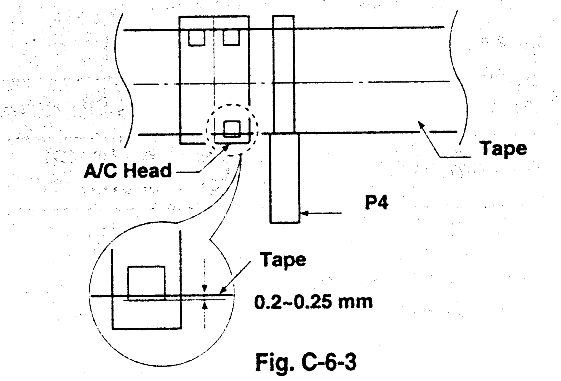

A/C Head
Tape
P4
Tape
0.2~0.25 mm

Fig. C-6-3

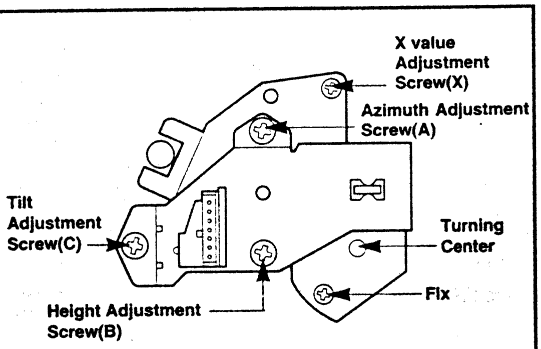

X value Adjustment Screw(X)
Azimuth Adjustment Screw(A)
Tilt Adjustment Screw(C)
Turning Center
Fix
Height Adjustment Screw(B)

Fig. C-6-2 A/C Head Assembly

MECHANISM ADJUSTMENT

B. Confirm that the tape passes smoothly between the T/UP guide and the Pinch Roller (Using a mirror or the naked eye).

1) After completing step A. (Preliminary Adjustment), check that the tape passes around the T/UP post without folding at the top or bottom.
If folding is observed, due the following:
① If folding is observed at the lower part of the T/UP post, then slowly turn the tilt adjustment in the clockwise direction to eliminate tape the curling.
② If folding is observed at the upper part of the T/UP post, then slowly turn the tilt adjustment in the counterclockwise direction to eliminate the tape curling.

C. RF Fine Adjustment (only if the RF waveform differs from figure C-5-3).

1) Check the RF Envelope after confirming smooth tape transport path at the T/UP Guide/Pinch Roller.

D. Precise Adjustment (Azimuth adjustment)

Test Equipment / Fixture	Test Equipment Connection Point	Test Conditions VCR (VCP) State	Adjustment Points
• Oscilloscope • Alignment tapes • Screw Driver(+) Type 5mm	• Audio output jack	• Play an alignment tape 1KHz, 7KHz sections.	• Azimuth Adjustment Screw(A) • Tilt Adjustment Screw(C)

Adjustment Procedure

1) Connect the probe of oscilloscope to Audio Output Jack.
2) Alternately adjust the Azimuth adjustment screw(A) and the Tilt adjustment screw(C) for maximum output of the 1KHz and 7KHz segments, while maintaining the flattest envelope differential between the two frequencies.

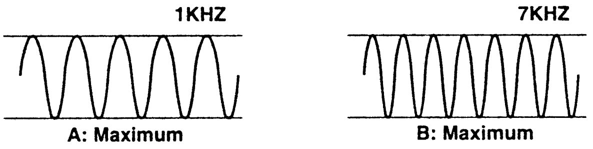
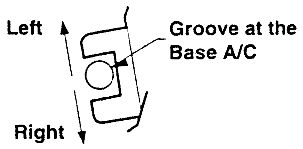


Fig. C-6-4

7. X-Value Adjustment

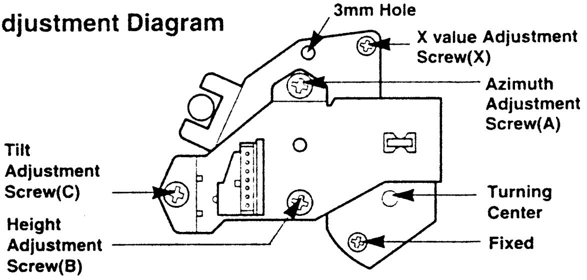
Purpose: To obtain compatibility with other VCR(VCP).

Test Equipment / Fixture	Test Equipment Connection Point	Test Conditions VCR (VCP) State	Adjustment diagrams
• Oscilloscope • Alignment tapes • Screw Driver(+) Type 5mm • Post Height Adjusting Driver	• CH-1: PB RF Envelope • CH-2: NTSC: SW 30Hz PAL : SW 25Hz • Head Switching Output Test Point • RF Envelope Output Test Point	• Play an alignment tape	

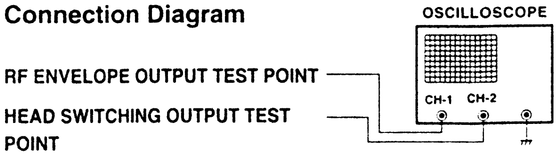
Adjustment Procedure

1) Loosen the fixed mounting and X Value adjustment screw.
2) Allow the mechanism to run long enough for auto tracking to complete it's cycle.
3) Move the A/C base laterally in the direction as shown in the diagram to find the center of the peak that allows for the maximum waveform envelope. This method should allow the 30um head to be centrally located over the 60um tape track.
4) Tighten the A/C head assembly mounting screws.

Adjustment Diagram


3mm Hole
X value Adjustment Screw(X)
Azimuth Adjustment Screw(A)
Tilt Adjustment Screw(C)
Turning Center
Height Adjustment Screw(B)
Fixed

Connection Diagram


OSCILLOSCOPE
RF ENVELOPE OUTPUT TEST POINT
HEAD SWITCHING OUTPUT TEST POINT
CH-1
CH-2

MECHANISM ADJUSTMENT

8. Adjustment after Replacing Drum Assembly (Video Heads)

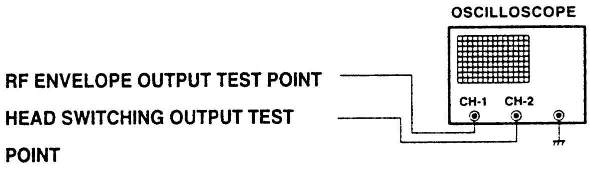
Purpose: To correct for shift in the roller guide and X value after replacing the drum.

Test Equipment / Fixture	Test Equipment Connection Points	Test Conditions VCR (VCP) State	Adjustment Points
• Oscilloscope • Alignment tape • Blank Tape • Post Height Adjusting Driver • Screw Driver(+) Type 5mm	• CH-1: PB RF Envelope • CH-2: NTSC: SW 30Hz PAL : SW 25Hz • Head Switching Output Test Point • RF Envelope Output Test Point	• Play the blank tape • Play an alignment tape	• Guide Roller Precise Adjustment • Switching Point • Tracking Preset • X-Value

Checking/Adjustment Procedure

Play a blank tape and check for tape curling or creasing around the roller guide. If there is a problem then follow the procedure 5. "Guide Roller Height" and 6. "Audio Control(A/C) Head Adjustment".

Connection Diagram


OSCILLOSCOPE
CH-1
CH-2
RF ENVELOPE OUTPUT TEST POINT
HEAD SWITCHING OUTPUT TEST POINT

Waveform

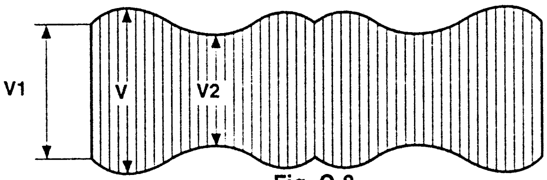


Fig. C-8

V1/V MAX ≧ 0.7
V2/V MAX ≧ 0.8
RF ENVELOPE OUTPUT POINT

9. Check the Tape Travel after Reassembling Deck Assembly.

9-1. Check Audio and RF Locking Time during playback and after CUE or REV (FF/REW)

Test Equipment / Fixture	Specification	Test Equipment Connection Points	Test Conditions VCR (VCP) State
• Oscilloscope • Alignment tape (with 6H 3kHz Color Bar Signal) • Stop Watch	• RF Locking Time: Less than 5 sec. • Audio Locking Time: Less than 10 sec.	• CH-1: PB RF Envelope • CH-2: Audio Output • RF Envelope Output Point • Audio Output Jack	• Play an alignment tape (with 6H 3kHz Color Bar Signal)

Checking Procedure

Play an alignment tape then change the operating mode to CUE or REV and confirm if the unit meets the above listed specifications.

NOTES:

1) CUE is fast forward mode (FF)
2) REV is the rewind mode (REW)
3) Referenced to the Play mode

9-2. Check the condition between the Audio and Video Sync. (Lip Sync.)

Test Equipment / Fixture	Specification	Test Equipment Connection Points	Test Conditions VCR (VCP) State
• Oscilloscope • Alignment Tape	• Less than ±16.6msec	• CH-1: PB RF Envelope • CH-2: Audio Output • RF Envelope Output Point • Audio Output Jack	• Play an alignment tape

Checking Procedure

1) Confirm that the period Ⓐ in Fig. C-9-1 is within ±16.6m/sec.
2) If the result is abnormal, repeat adjustment #7. (X-Value adjustment)

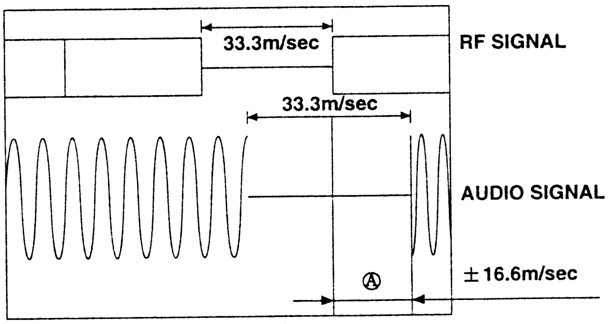


Fig. C-9-1

9-3. Check for tape curling or jamming

Test Equipment / Fixture	Specification	VCR (VCP) State
• T-160 Tape • T-120 Tape	• Be sure there is no tape jamming or curling at the begining, middle or end of a T-160 tape.	• Run the CUE, REV play mode at the beginning and the end of the tape.

Checking Procedure

1) Confirm that the tape runs smoothly around the roller guides, drum and A/C head assemblies while abruptly changing operating modes from Play to CUE or REV. This is to be checked at the begining, middle and end sections of the cassette.
2) Confirm that the tape passes over the A/C head assembly as indicated by proper audio reproduction and proper tape counter performance.

MECHANISM ADJUSTMENT

10. Maintenance/Inspection Procedure

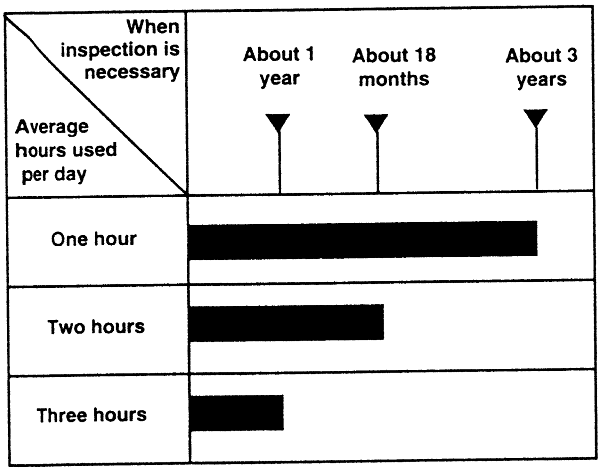
1) Required Maintenance

The recording density of a VCR(VCP) is much higher than that of an audio tape recorder. VCR(VCP) components must be very precise, at tolerances of 1/1000mm, to ensure compatiblity with other VCRs. If any of these components are worn or dirty, the symptoms will be the same as if the part is defective. To ensure a good picture, periodic inspection and maintenance, including replacement of worn out parts and lubrication, is necessary.

2) Scheduled Maintenance

Schedules for maintenance and inspection are not fixed because they vary greatly according to the way in which the customer uses the VCR(VCP), and the environment in which the VCR(VCP) is used.
But, in general home use, a good picture will be maintained if inspection and maintenance is made every 1,000 hours. The table below shows the relation between time used and inspection period.

Table 1



3) Check before starting repairs

The following faults can be remedied by cleaning and oiling. Check the needed lubrication and the conditions of cleanliness in the unit.
Check with the customer to find out how often the unit is used, and then determine that the unit is ready for in spection and maintenance. Check the following parts.

Tabel 2

Phenomenon	Inspection
Poor S/N, no color	Dirt on video head or worn video head
Tape does not run or tape is slack	Dirt on pinch roller, belt or flywheel belt
Vertical jitter, horizontal jitter	Dirt on video head or in tape transport system
Color beats	Dirt on full-erase head
Low volume or distorted audio	Dirt on audio/control head
No Fast forward or rewind or rotation is slow	Dirt on belt

4) Supplies Required for Inspection and Maintenance

(1) Grease Kanto G-311G or equivalent
(2) Isopropyl Alcohol or equivalent
(3) Cleaning Patches

5) Maintenance Procedure
5-1) Cleaning

(1) Cleaning video head
First use a cleaning tape. If the dirt on the head is too stubborn to remove by tape, use the cleaning patch. Coat the cleaning patch with Isopropyl Alcohol. Touch the cleaning patch to the head tip and gently turn the head(rotating cylinder) right and left.
(Do not move the cleaning patch vertically. Make sure that only the buckskin on the cleaning patch comes into contact with the head. Otherwise, the head may be damaged.)
Thoroughly dry the head. Then run the test tape. If Isopropyl Alcohol remains on the video head, the tape may be damaged when it comes into contact with the head surface.

(2) Clean the tape transport system and drive system, etc, by wiping with a cleaning patch wetted with Isporopyl Alcohol.

NOTE

① It is the tape transport system which comes into contact with the running tape. The drive system consists of those parts which moves the tape.
② Make sure that during cleaning you do not touch the tape transport system with the tip of a screw driver and no that force is that would cause deforming or damage applied to the system.

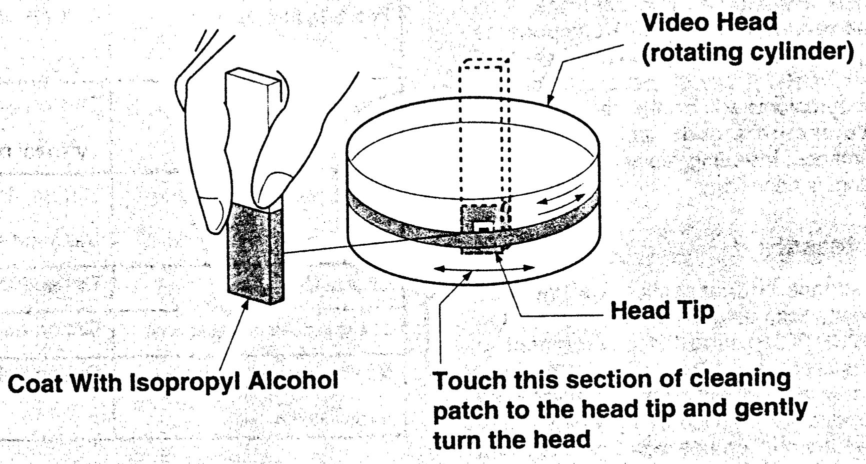

Video Head
(rotating cylinder)
Head Tip
Coat With Isopropyl Alcohol
Touch this section of cleaning patch to the head tip and gently turn the head

Fig. C-10-1

5-2) Greasing

(1) Greasing guidelines
Apply grease, with a cleaning patch. Do not use excess grease. It may come into contact with the tape transport or drive system. Wipe any excess and clean with cleaning patch wetted in Isopropyl Alcohol.

(2) Periodic greasing
Grease specified locations every 5,000 hours.

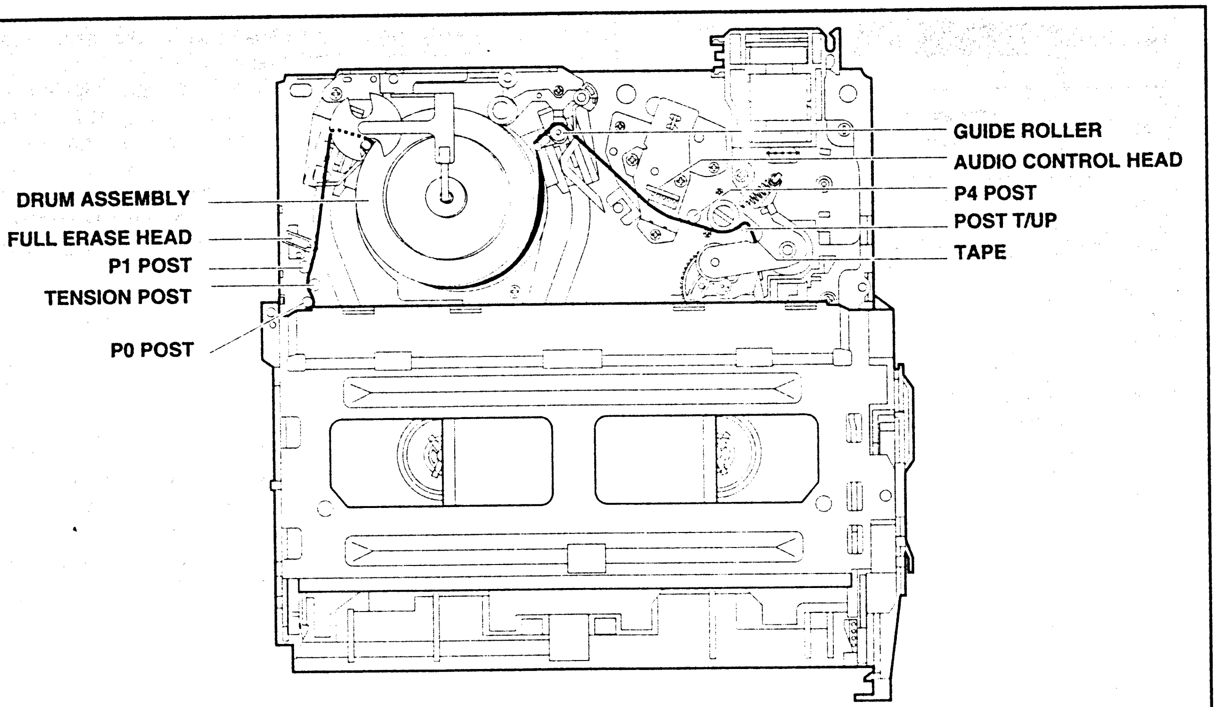

GUIDE ROLLER
AUDIO CONTROL HEAD
P4 POST
POST T/UP
TAPE
DRUM ASSEMBLY
FULL ERASE HEAD
P1 POST
TENSION POST
P0 POST

Fig. C-10-2 Tape Transport System

MECHANISM ADJUSTMENT

Phenomenon	Inspection	Replacement	
Color beats	Dirt on full-erase head	○	→ ①
Poor S/N no color	Dirt on video head	○	→ ②
Vertical jitter	Dirt on video head Dirt on tape transport system	○	→ ③
Low volume Sound distorted	Dirt on audio/control head	○	→ ④
Tape does not run. Tape is slack.	Dirt on pinch roller	○	→ ⑤

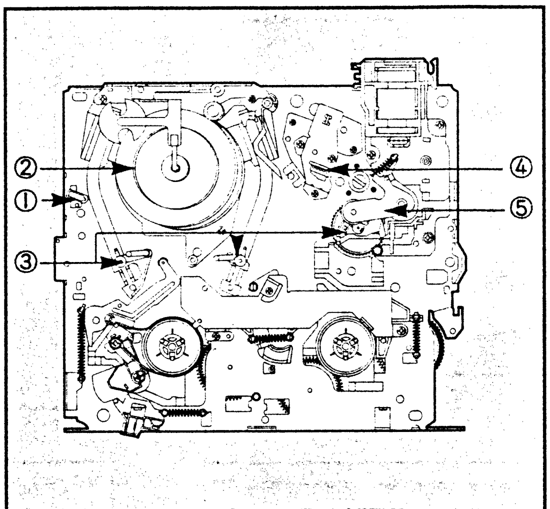


Fig. C-10-3 Top VIEW

Phenomenon	Inspection	Replacement	
• No fast forward or rewind, or rotation is slow • Tape does not run • Slack tape	Dirt on reel belt	○	→ ⑥
In Review and Unloading (off mode), the Tape is rolled up loosely.	Clutch Ass'y S27 Torque reduced	○	→ ⑦
	Cleaning Drum and transport system		

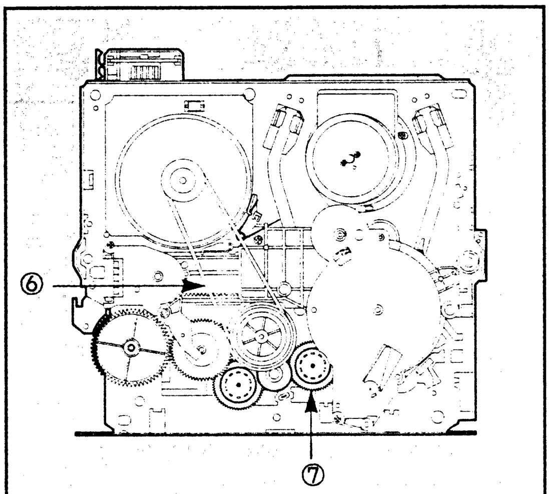


Fig. C-10-4 BOTTOM VIEW

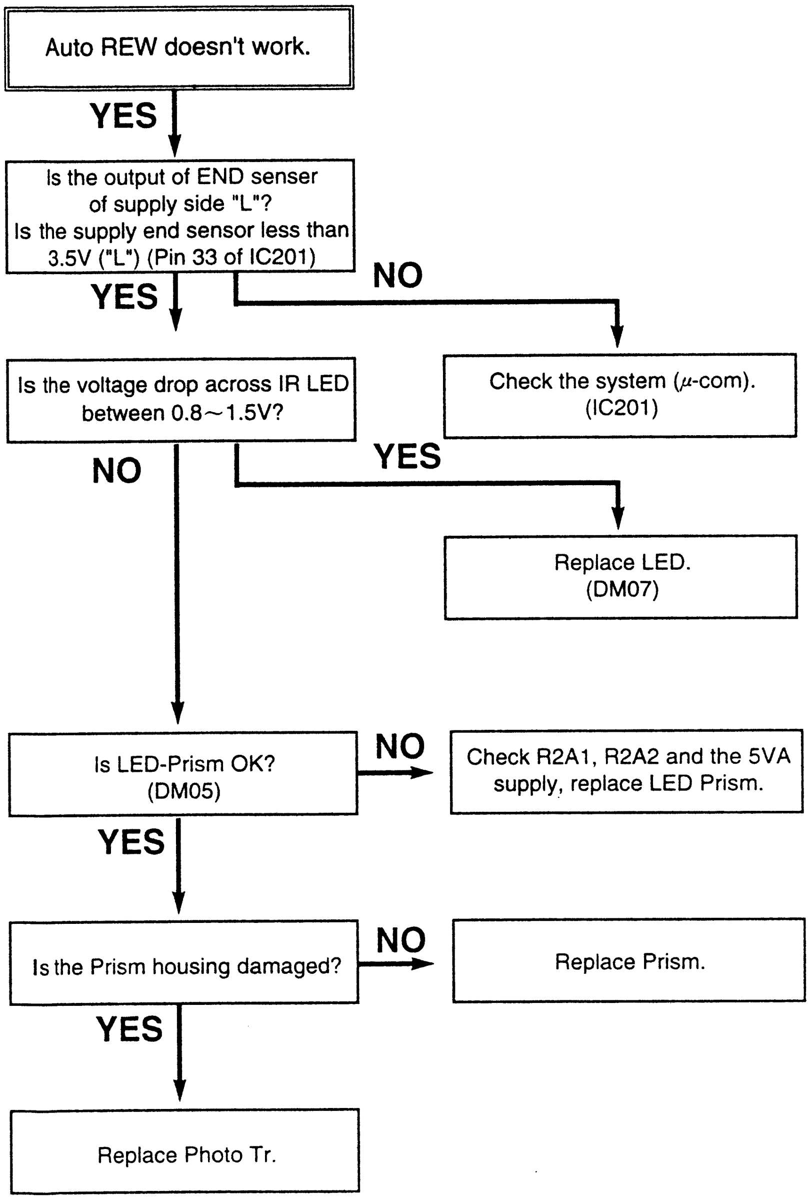
Note

If locations marked with ○ do not operate normally after cleaning, check for wear and replace.
See the EXPLODED VIEWS at the end of this manual as well as the above illustrations for the sections to be lubricated and greased.

MECHANISM TROUBLESHOOTING GUIDE

1.Deck Mechanism

A.

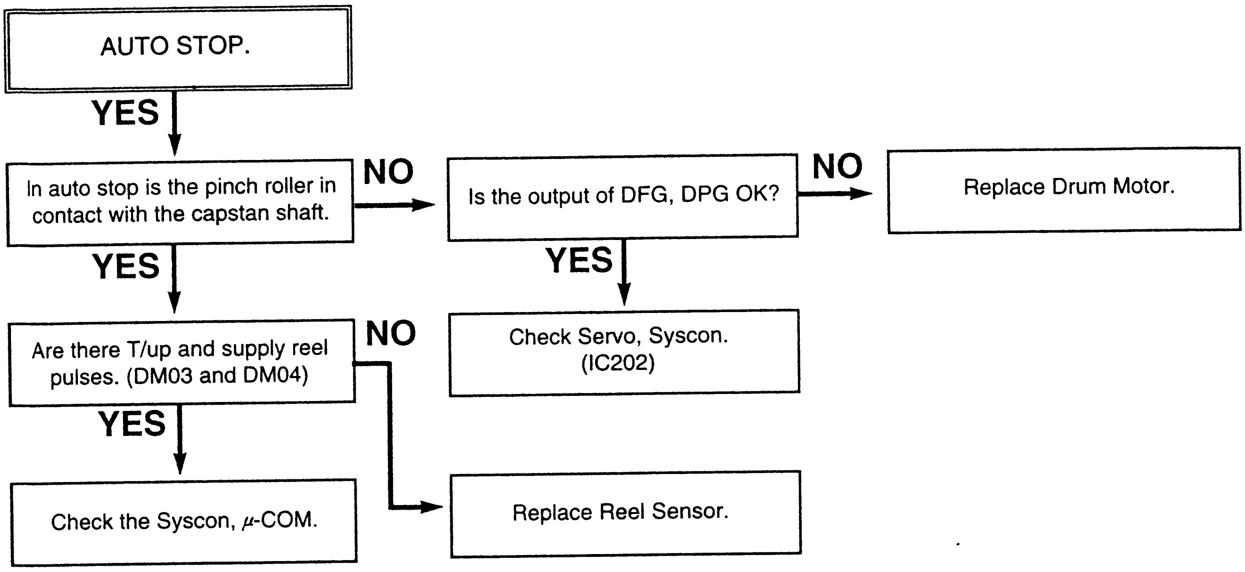

Auto REW doesn't work.
YES
Is the output of END senser of supply side "L"? Is the supply end sensor less than 3.5V ("L") (Pin 33 of IC201)
YES
NO
Check the system (μ-com). (IC201)
Is the voltage drop across IR LED between 0.8~1.5V?
NO
YES
Replace LED. (DM07)
Is LED-Prism OK? (DM05)
NO
Check R2A1, R2A2 and the 5VA supply, replace LED Prism.
YES
Is the Prism housing damaged?
NO
Replace Prism.
YES
Replace Photo Tr.

NOTES:

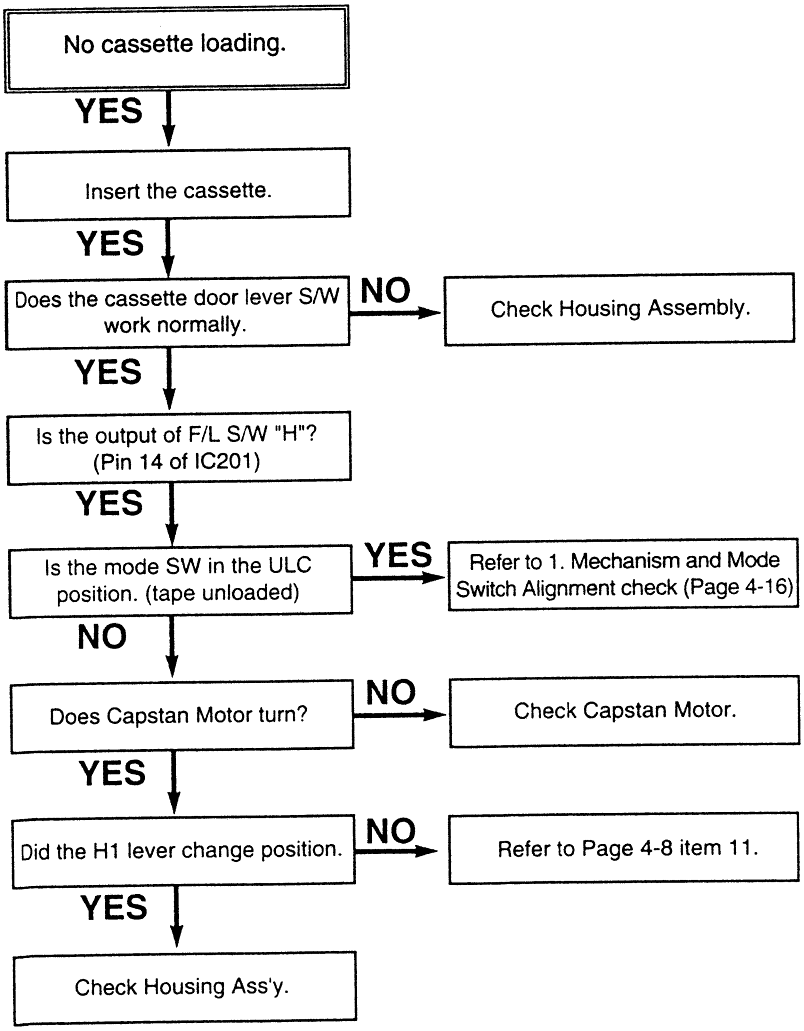
1) Auto REW takes place when the supply end sensor is "H" high.
2) "H"=voltage greater than 3.5V, "L"=voltage between 0.7~1.0V.
3) Refer to pages 3-17/18 and 3-25/26.

MECHANISM TROUBLESHOOTING GUIDE

B.

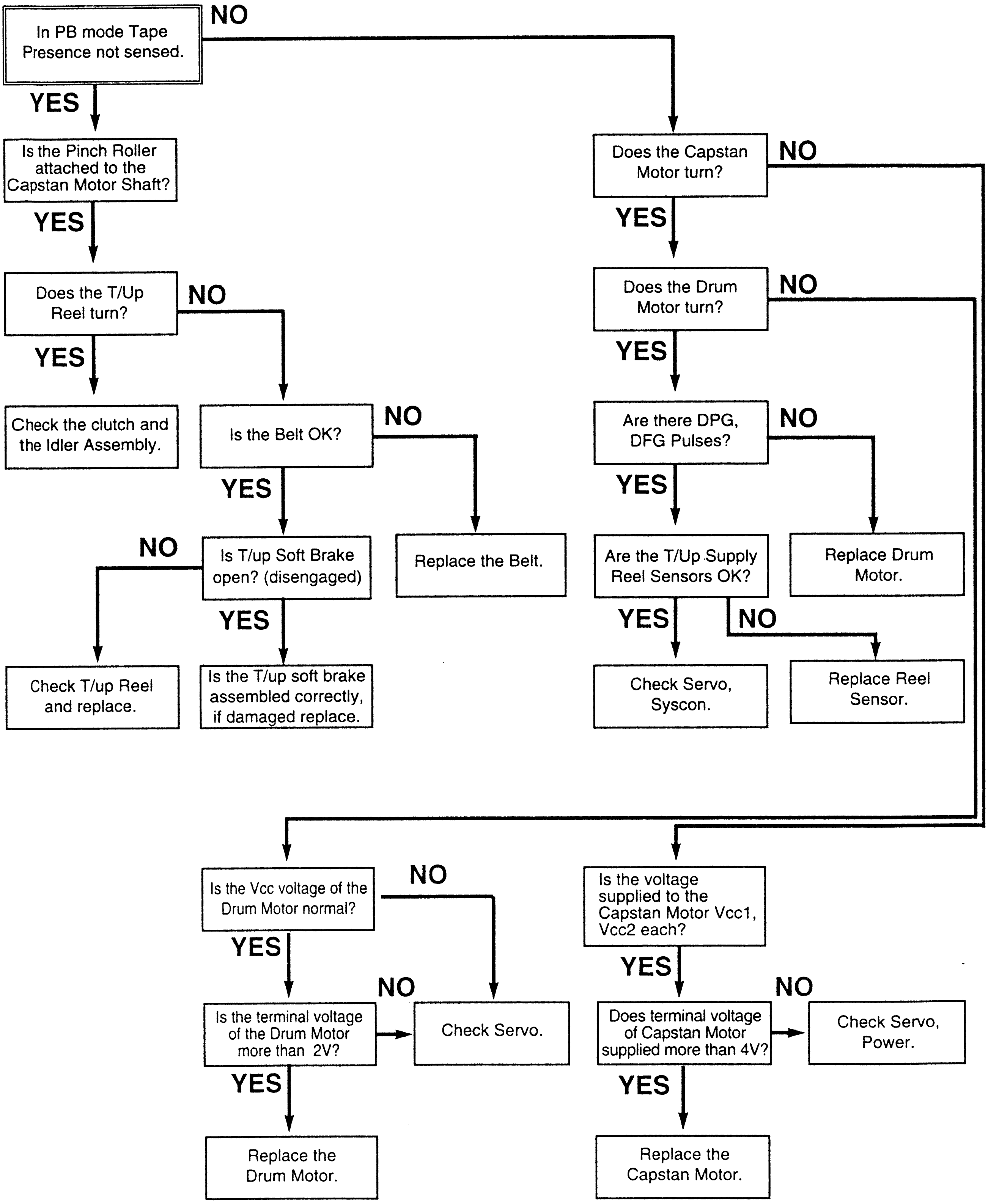

AUTO STOP.
YES
In auto stop is the pinch roller in contact with the capstan shaft.
NO
Is the output of DFG, DPG OK?
NO
Replace Drum Motor.
YES
YES
Check Servo, Syscon. (IC202)
Are there T/up and supply reel pulses. (DM03 and DM04)
NO
YES
Check the Syscon, μ-COM.
Replace Reel Sensor.

C.


No cassette loading.
YES
Insert the cassette.
YES
Does the cassette door lever S/W work normally.
NO
Check Housing Assembly.
YES
Is the output of F/L S/W "H"? (Pin 14 of IC201)
YES
Is the mode SW in the ULC position. (tape unloaded)
YES
Refer to 1. Mechanism and Mode Switch Alignment check (Page 4-16)
NO
Does Capstan Motor turn?
NO
Check Capstan Motor.
YES
Did the H1 lever change position.
NO
Refer to Page 4-8 item 11.
YES
Check Housing Ass'y.

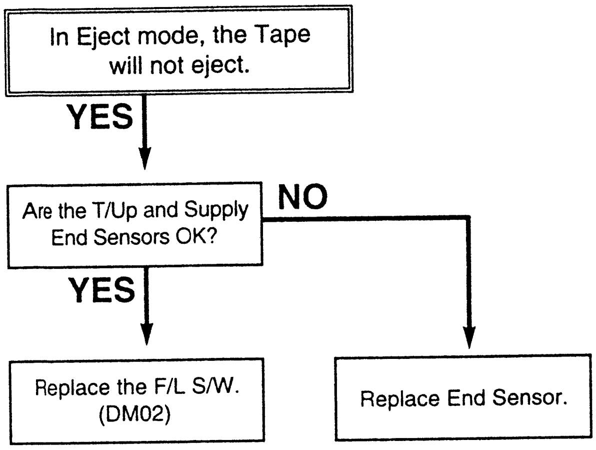
MECHANISM TROUBLESHOOTING GUIDE

D.

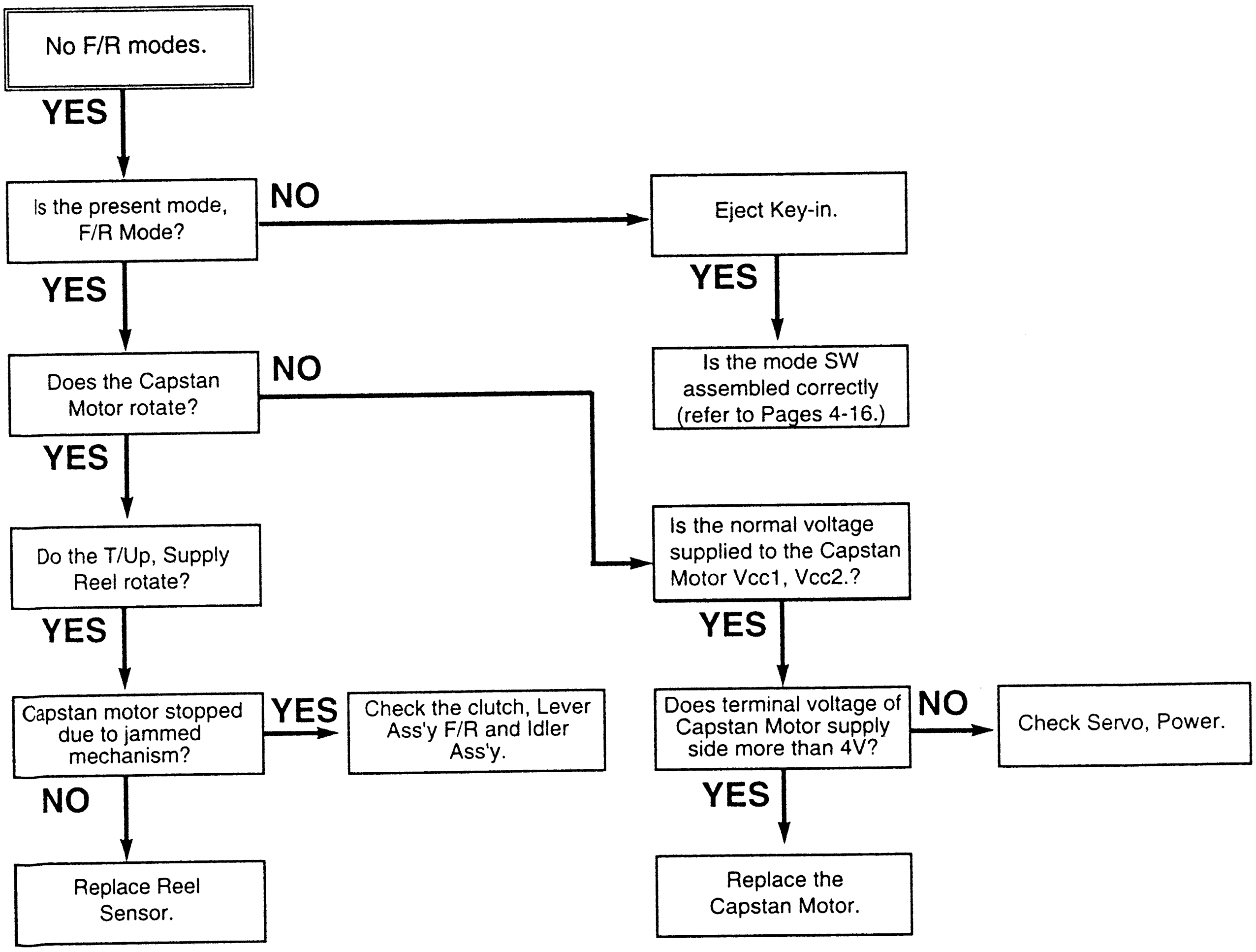

In PB mode Tape Presence not sensed.
NO
YES
Is the Pinch Roller attached to the Capstan Motor Shaft?
YES
Does the T/Up Reel turn?
NO
YES
Check the clutch and the Idler Assembly.
Is the Belt OK?
NO
YES
Replace the Belt.
NO
Is T/up Soft Brake open? (disengaged)
YES
Check T/up Reel and replace.
Is the T/up soft brake assembled correctly, if damaged replace.
Does the Capstan Motor turn?
NO
YES
Does the Drum Motor turn?
NO
YES
Are there DPG, DFG Pulses?
NO
YES
Replace Drum Motor.
Are the T/Up Supply Reel Sensors OK?
YES
NO
Check Servo, Syscon.
Replace Reel Sensor.
Is the Vcc voltage of the Drum Motor normal?
NO
YES
Is the terminal voltage of the Drum Motor more than 2V?
NO
Check Servo.
YES
Replace the Drum Motor.
Is the voltage supplied to the Capstan Motor Vcc1, Vcc2 each?
YES
Does terminal voltage of Capstan Motor supplied more than 4V?
NO
Check Servo, Power.
YES
Replace the Capstan Motor.

MECHANISM TROUBLESHOOTING GUIDE

E.


In Eject mode, the Tape will not eject.
YES
Are the T/Up and Supply End Sensors OK?
NO
YES
Replace the F/L S/W. (DM02)
Replace End Sensor.

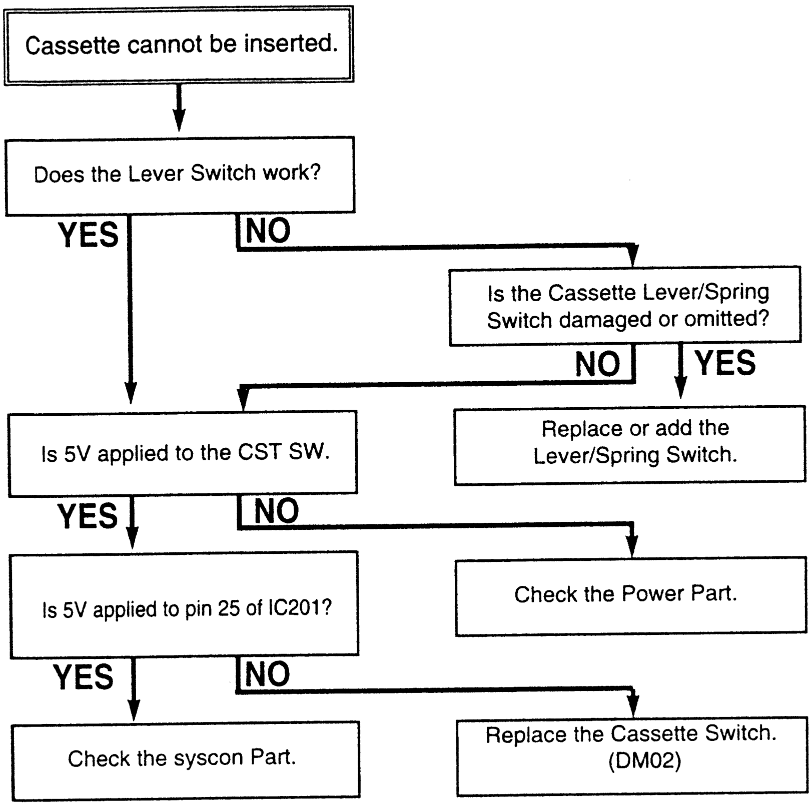
F.


No F/R modes.
YES
Is the present mode, F/R Mode?
NO
Eject Key-in.
YES
YES
Is the mode SW assembled correctly (refer to Pages 4-16.)
Does the Capstan Motor rotate?
NO
YES
Do the T/Up, Supply Reel rotate?
Is the normal voltage supplied to the Capstan Motor Vcc1, Vcc2.?
YES
YES
Capstan motor stopped due to jammed mechanism?
YES
Check the clutch, Lever Ass'y F/R and Idler Ass'y.
Does terminal voltage of Capstan Motor supply side more than 4V?
NO
Check Servo, Power.
NO
YES
Replace Reel Sensor.
Replace the Capstan Motor.

MECHANISM TROUBLESHOOTING GUIDE

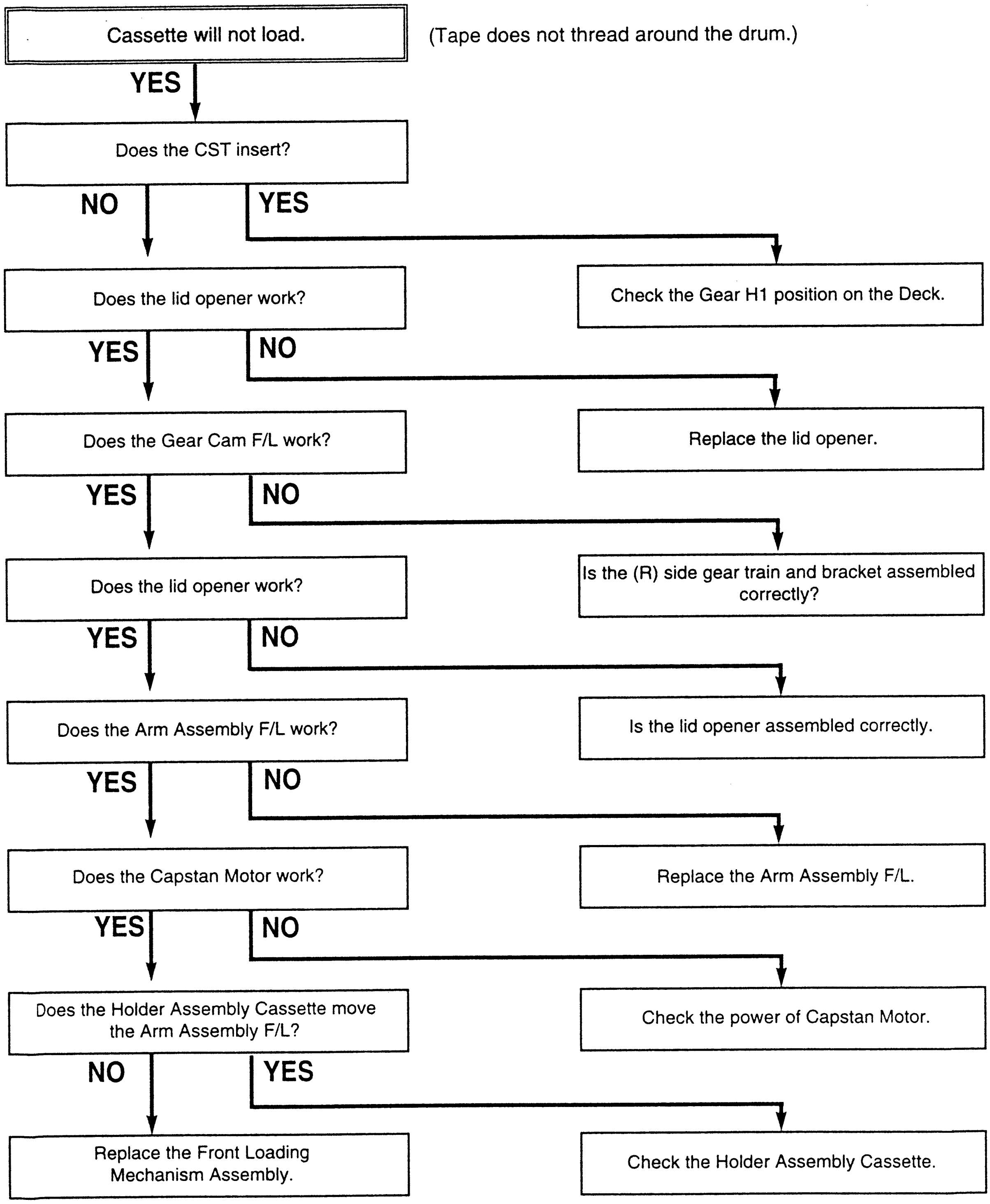
2. Front Loading Mechanism

A.


Cassette cannot be inserted.
Does the Lever Switch work?
YES
NO
Is the Cassette Lever/Spring Switch damaged or omitted?
NO
YES
Is 5V applied to the CST SW.
Replace or add the Lever/Spring Switch.
YES
NO
Is 5V applied to pin 25 of IC201?
Check the Power Part.
YES
NO
Check the syscon Part.
Replace the Cassette Switch. (DM02)

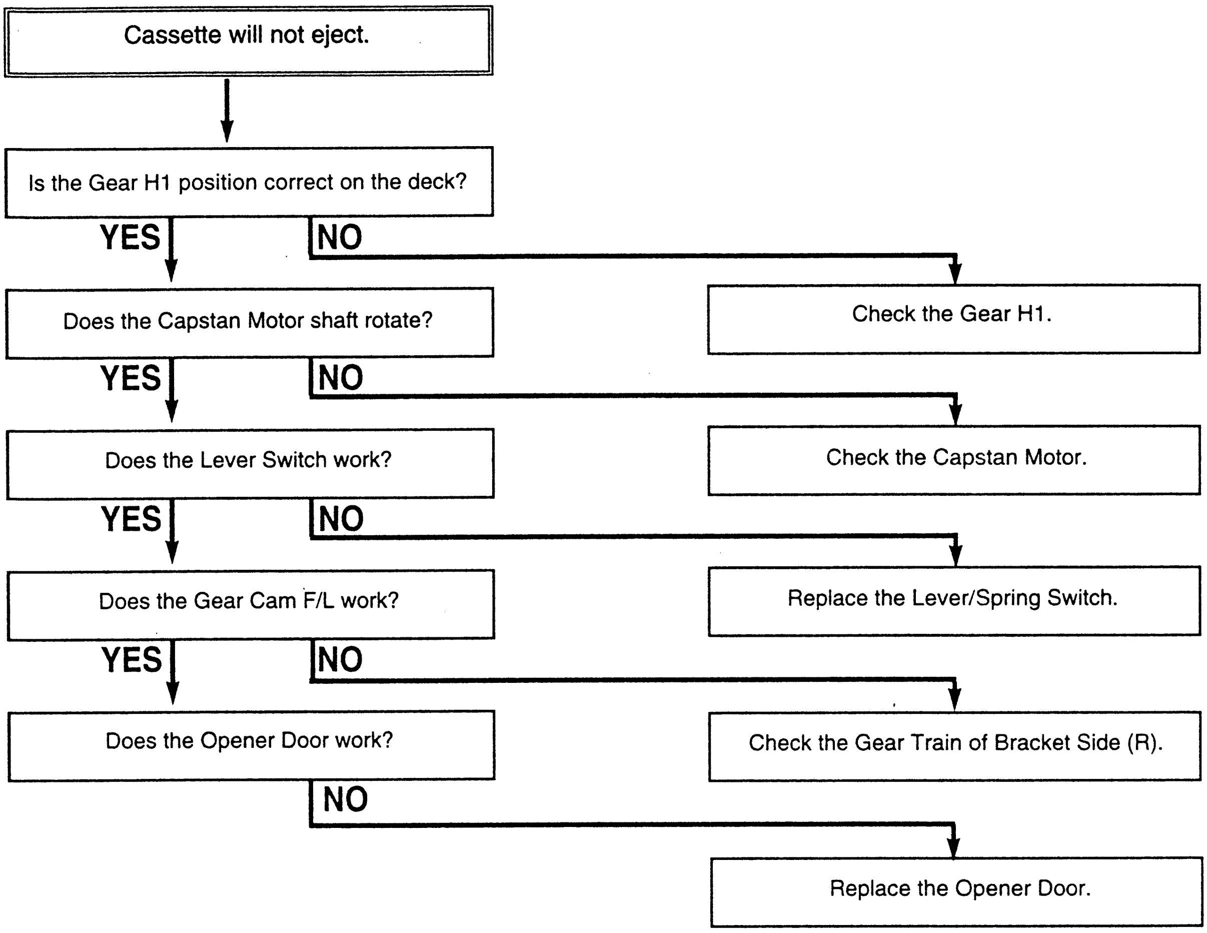
MECHANISM TROUBLESHOOTING GUIDE

B.


Cassette will not load.
(Tape does not thread around the drum.)
YES
Does the CST insert?
NO
YES
Does the lid opener work?
Check the Gear H1 position on the Deck.
YES
NO
Does the Gear Cam F/L work?
Replace the lid opener.
YES
NO
Does the lid opener work?
Is the (R) side gear train and bracket assembled correctly?
YES
NO
Does the Arm Assembly F/L work?
Is the lid opener assembled correctly.
YES
NO
Does the Capstan Motor work?
Replace the Arm Assembly F/L.
YES
NO
Does the Holder Assembly Cassette move the Arm Assembly F/L?
Check the power of Capstan Motor.
NO
YES
Replace the Front Loading Mechanism Assembly.
Check the Holder Assembly Cassette.

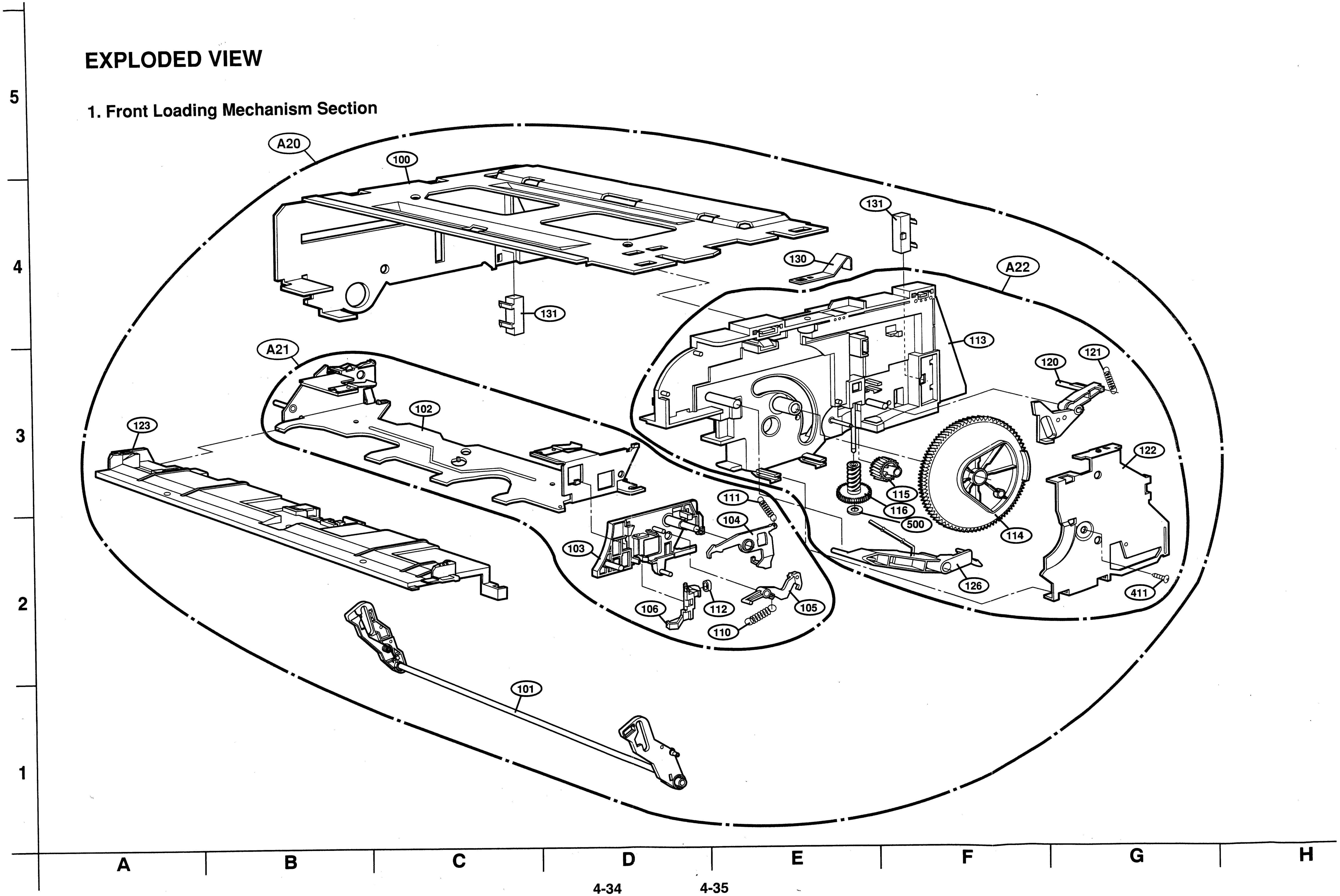
MECHANISM TROUBLESHOOTING GUIDE

C.


Cassette will not eject.
Is the Gear H1 position correct on the deck?
YES
NO
Check the Gear H1.
Does the Capstan Motor shaft rotate?
YES
NO
Check the Capstan Motor.
Does the Lever Switch work?
YES
NO
Replace the Lever/Spring Switch.
Does the Gear Cam F/L work?
YES
NO
Check the Gear Train of Bracket Side (R).
Does the Opener Door work?
NO
Replace the Opener Door.

EXPLODED VIEW

1. Front Loading Mechanism Section

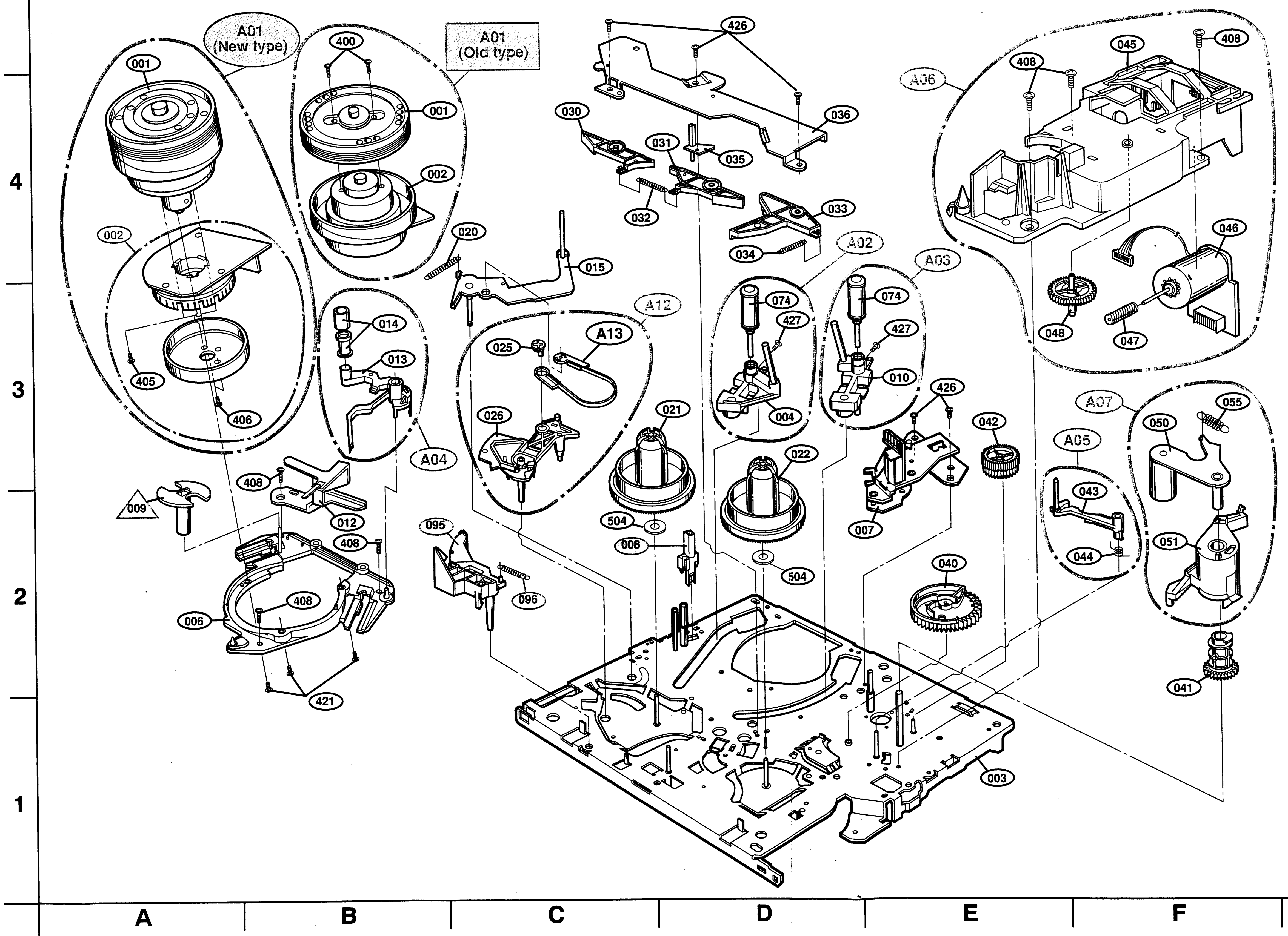


5
4
3
2
1
A20
100
131
130
131
A22
113
A21
102
120
121
123
122
115
111
104
116
500
114
103
126
411
106
112
105
110
101
A
B
C
D
E
F
G
H

EXPLODED VIEW

2. Moving Mechanism Section(1) Top View

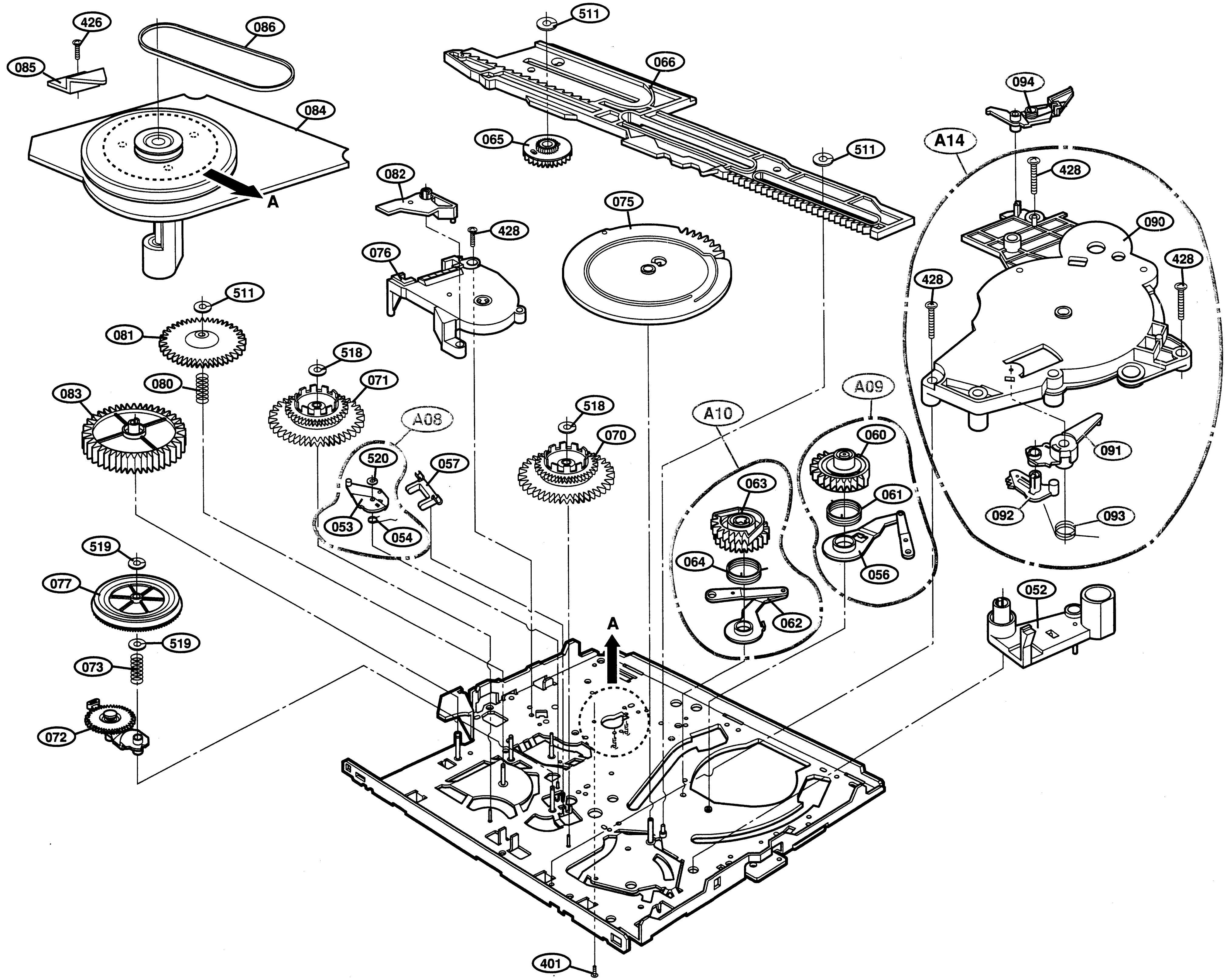
NOTES) 1) ⬭ marks the optional parts only in VCR (Video Cassette Recorder) Models.
2) △009 marks the optional parts only i n Hi-Fi Models.
3) (A01) New Type Drum Assembly. (No two screws and P.C.B on the Drum.)
4) [A01] Old type Drum Assembly. (there are two screws and P.C.B on the Drum.)


A01 (New type)
001
002
405
406
400
A01 (Old type)
001
002
020
015
014
013
A04
426
036
030
031
035
032
033
034
A02
A03
074
427
004
074
427
010
A12
A13
025
026
021
022
A06
408
045
408
046
048
047
426
042
007
A07
055
050
A05
043
044
051
040
041
504
008
504
003
095
096
408
012
009
408
408
006
421
5
4
3
2
1
A
B
C
D
E
F
G
H

EXPLODED VIEW

NOTES) 1) ◯ is the additional parts of the JOG/SHUTTLE Models.
2) (094) marks the optional parts only in VCR (Video Cassette Recorder) Models.

3. Moving Mechanism Section(2) Bottom View



426
086
085
084
A
511
066
065
094
A14
511
428
082
075
428
076
090
428
428
511
081
518
071
080
083
A08
520
057
518
070
A10
A09
060
063
061
053
054
091
092
093
519
077
064
056
052
062
519
073
A
072
401
5
4
3
2
1
A
B
C
D
E
F
G
H

MEMO

MEMO

SECTION 5 REPLACEMENT PARTS LIST

• Mechanical Section

RUN DATE : 96.10.09

NSP: Not Service Part

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
				ASSEMBLY PARTS SECTION		
		A00	412K191G	DECK ASSY	D-27+PACK LGEWG P(4HD HIFI)	
	OR	A00	412S191G	DECK ASSY	D27(V/D)+PACK P(4HD HIFI)	
		A01	413-385C	DRUM	ASSY (D-27 PAL 6CH HIFI)	
	OR	A01	413F385C	DRUM	ASSY(D-27 PAL 6CH HIFI)LGEC	
		A02	225-361A	BASE	ASSY P2	
		A03	225-364A	BASE	ASSY P3	
		A04	386-394A	ARM	ASSY CLEANER	
		A05	386-405A	ARM	ASSY T/UP	
		A06	321-668A	BRACKET	ASSY L/D MOTOR	
	OR	A07	340-070A	HOLDER	ASSY PINCH	
		A07	340-195A	HOLDER	ASSY PINCH	
		A08	333-331A	LEVER	ASSY F/R	
		A09	435-435A	GEAR	ASSY P2	
		A10	435-437A	GEAR	ASSY P3	
		A12	333-329A	LEVER	ASSY TENSION	
		A13	328-075A	BAND	ASSY TENSION	NSP
		A20	219-023A	HOUSING	ASSY D-27	
		A21	340-010A	HOLDER	ASSY CST	
		A22	321-672A	BRACKET	ASSY SIDE(R)	
				PARTS SECTION		
		001	413-174D	DRUM	ASSY UPPER (D17 PAL 6CH)	
		002	413-370B	DRUM	ASSY, LOWER(D27-6CH)	
		003	311-011A	CHASSIS ASSY'	D27	NSP
		004	225-362A	BASE	SUB ASSY P2	NSP
		006	225-376A	BASE	ASSY DRUM	
		007	225-371A	BASE	ASSY A/C	
		008	523-833A	HEAD	FE HVFHU0010AK ALPS	
		009	434-244A	ROLLER	ASSY INERTIA	
		010	225-365A	BASE	SUB ASSY P3	NSP
		012	225-399A	BASE	ASSY BRUSH	
		013	386-395A	ARM	CLEANER	NSP
		014	324-835B	HOLDER	ASSY CLEANER	NSP
		015	386-392A	ARM	ASSY TENSION	
		020	442-640A	SPRING	TENSION	
		021	456-070A	REEL	S27	
		022	456-071A	REEL	T27	
		025	340-008A	HOLDER	BAND(C)	NSP
		026	333-330A	LEVER	TENSION	NSP
		030	338-112A	BRAKE	ASSY SM	
		031	338-114A	BRAKE	ASSY TM	
		032	442-655A	SPRING	MB	
		033	338-116A	BRAKE	ASSY TS	
		034	442-654A	SPRING	TSB	
		035	316-019A	BODY	PRISM LED	
		036	257-071A	PLATE	UP	
		040	435-441A	GEAR	PINCH CAM	
		041	435-440A	GEAR	PINCH	

NSP: Not Service Part

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		042	435-439A	GEAR	CNT	
		043	386-404A	ARM	SUB ASSY T/UP	
		044	442-650A	SPRING	T/UP	NSP
		045	321-669A	BRACKET	L/D MOTOR	
		046	414-199A	MOTOR	ASSY L/D	
		047	437-019A	WORM	L/D MOTOR	
		048	437-020A	WORM	WHEEL	
		050	4261R-0002A	ARM ASSY!	PINCH (D/C)	
		051	340-073A	HOLDER	SUB ASSY PINCH	
		052	225-374A	BASE	TENSION	
		053	333-332A	LEVER	F/R	NSP
		054	442-645A	SPRING	F/R	NSP
		055	442-649A	SPRING	PINCH	NSP
		056	333-334A	LEVER	ASSY P2	NSP
		057	386-398A	ARM	F/R	
		060	435-436A	GEAR	P2	NSP
		061	442-647A	SPRING	P2	NSP
		062	333-336A	LEVER	ASSY P3	NSP
		063	435-438A	GEAR	P3	NSP
		064	442-648A	SPRING	P3	NSP
		065	435-442A	GEAR	P/S	
		066	257-070A	PLATE	SLIDER	
		070	337-007B	CLUTCH	ASSY S27	
		071	337-008A	CLUTCH	ASSY T27	
		072	386-396A	ARM	ASSY IDLER	
		073	442-644A	SPRING	UP/D	
		074	434-173A	ROLLER	ASSY GUIDE	
	OR	074	434-173C	ROLLER	ASSY GUIDE	
	OR	074	434-173D	ROLLER	ASSY GUIDE(DAI YANG)	
		075	435-433A	GEAR	CAM L/D	
		076	556-252B	SWITCH	MODE S/W(D-27),HMW0840-01,HOSI	
		077	435-432A	GEAR	PULLEY	
		080	442-656A	SPRING	H1	
		081	435-443A	GEAR	H1	
		082	333-339A	LEVER	H1	
		083	435-444A	GEAR	H-2	
	OR	084	414-201A	MOTOR	GVC-027A CAPSTAN D-27 ALPS	
		084	414-201B	MOTOR	GVC-027B CAPSTAN D-27 ALPS	
		085	321-696A	BRACKET	CAPSATN,D27	
		086	452-062A	BELT	CAPSTAN	
		090	321-670A	BRACKET	CAM	
		091	333-333A	LEVER	JOG	
		092	435-434A	GEAR	JOG	
		093	442-646A	SPRING	JOG	
		094	338-110A	BRAKE	ASSY CAP	
		095	333-338A	LEVER	TAB	NSP
		096	442-652A	SPRING	TAB	
		100	257-072A	PLATE	TOP	
		101	386-407A	ARM	ASSY F/L	
		102	340-011A	HOLDER	SUB ASSY CST	NSP
		103	321-671A	BRACKET	HOLDER(R)	NSP
		104	333-341A	LEVER	STOPPER(R)	NSP
		105	465-039A	OPENER	LID	NSP
		106	386-410A	ARM	RELEASE	NSP
		110	442-660A	SPRING	RELEASE	

RUN DATE : 96.10.09
NSP: Not Service Part

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		111	442-659A	SPRING	STOPPER	
		112	477-058A	RUBBER	GRIP	NSP
		113	321-673A	BRACKET	SUB ASSY (R)	NSP
		114	435-445A	GEAR	CAM F/L	NSP
		115	435-446A	GEAR	CONNECT	NSP
		116	435-447A	GEAR	WORM	NSP
		120	333-342A	LEVER	SWITCH	NSP
		121	442-661A	SPRING	SWITCH	NSP
		122	257-074A	PLATE	COVER	NSP
	OR	123	384-143A	GUIDE	CST	
		123	384-151A	GUIDE	CST27	
		126	465-040A	OPENER	DOOR	NSP
		130	257-075A	PLATE	GROUND	NSP
		131	340-062A	HOLDER	ASSY PRISM	
				SCREW		
		400	1MDC0302418	PAN HEAD MACHINE SCREW P/WASH+	D 3.0 L 8.0 MSWR3/FZY	
		401	1MPK0261418	PAN HEAD MACHINE SCREW +,-	D 2.6 L 4.0 MSWR3/FZY	
		408	1MBC0302418	BINDING HEAD MACHINE SCREW +	D 3.0 L 8.0 MSWR3/FZY	
		411	353-046B	SCREW	SPECIAL (3X8 FZMY)	NSP
		421	1MPC0302618	PAN HEAD MACHINE SCREW +!	D3.0 L10.0,MSWR3/FZY	
		426	1MPC0302018	PAN HEAD MACHINE SCREW +!	D 3.0 L 6.0 MSWR3/FZY	
		427	353-054B	SCREW	MINIATURE	
		428	353-221A	SCREW	M3-L15	
				NUT, WASHER		
		500	354-080F	WASHER	STOPPER	
		504	354-001B	WASHER	P.S D3.1XD6X0.5T	
		511	354-080C	WASHER	STOPPER D2.6XD5X0.5T	
		518	354-128A	WASHER	STOPPER D1.7XD4.5X0.5T	
		519	354-128B	WASHER	STOPPER D2.5XD9X0.5T	

• Cabinet & Main Frame Section

RUN DATE : 96.10.09
NSP: Not Service Part

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
				ASSEMBLY PARTS SECTION		
		A43	3721R-F020S	PANEL ASSY	FRONT (P934P 3GO1,3)	
		A44	3501RK0608A	BOARD ASSY	SMPS	
		A45	3501RK0511A	BOARD ASSY	PRE-AMP	
		A46	3501R-0508L	BOARD ASSY	MAIN	
				PARTS SECTION		
		250	217-570C	CASE	TOP (C-435A)	
		260	315-347B	FRAME	MAIN(60HR)	NSP
		265	324-995A	HOLDER	PWB	NSP
		266	321-738A	BRACKET	ASSY HOUSING(GHV-960'S)	
		267	255-429A	PLATE	GND(M/F)	
		268	255-359A	PLATE	SIDE GND(R-P40P'S)	

RUN DATE : 96.10.09
NSP: Not Service Part

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		269	255-362A	PLATE	PRE-AMP GND (R-P40P'S)	
		270	321-743A	BRACKET	PROTECT	
		280	3720R-F019F	PANEL	FRONT(P934P 3GO1,3)	NSP
		283	3580R-0011B	DOOR	CST(P934P 3GO1,3)	
		284	442-681A	SPRING	DOOR	
		300	681-051A	CORD	KKP-419J B-172 KLCE-2F PAL	
		320	258-778E	PANEL	ASSY DISTRIBUTOR	
		323	255-361A	PLATE	MODUL GND	
		330	220-050A	COVER	BOTTOM	
				SCREW		
		451	353-046C	SCREW	(3X10 FZMY)	
		452	353-051A	SCREW	SPECIAL(3X10 FZMY)	
		459	353-046A	SCREW	SPECIAL (3X6 FZMY)	
		462	353-136A	SCREW	SPECIAL(4.6X12.5 FBK)	
		463	1MBC0302418	BINDING HEAD MACHINE SCREW +	D 3.0 L 8.0 MSWR3/FZY	

• Packing Accessory Section

RUN DATE : 96.10.09
NSP: Not Service Part

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		801	3835RP0009A	INSTRUCTION ASSY	P934P 3GO3	
		802	3890R-G348A	BOX	P934P 3GO3	NSP
		803	283-292A	PACKING	PK10P EVENT	NSP
		804	291-002B	SHEET CUSHION	GHV-1900'S	NSP
		808	534-008C	BATTERY	AAAM(R03) 1.5V 1PAIR(LOCAL)	
		811	564-017B	PLUG ASSY	PHONO CORD 1WAY (YL)	
		812	564-018B	PLUG ASSY	PHONO CORD 2WAY (RD/WH)	

• Remote Control Section

RUN DATE : 96.10.09
NSP: Not Service Part

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		900	6711R1P004M	REMOTE CONTROLLER ASSY	R/C ASSY(M3;P934P 3GO3)	
		901	3300R-0039A	PLATE	TOP(M3;P934NP EVNT)	NSP
		902	3110R-0022E	CASE	TOP(M3;P934P 3GO3)	NSP
		903	556-270B	SWITCH	RUBBER-A (P234I)	NSP
		904	556-271T	REMOTE CONTROL	RUBBER-B(M3) P433AS	NSP
		905	6871R-0406A	PWB ASSY!	M3 R/C NORMAL(P22P)	
		906	220-136A	COVER	BOTTOM (M3)	
		907	236-585A	WINDOW	FILTER (M3)	NSP
		908	220-137A	COVER	BATTERY (M3)	
		909	442-729A	SPRING	BATTERY-A	NSP
		910	1TPH0202016	PAN HEAD TAPPING SCREW + 2	D 2.0 L 6.0 MSWR3/(BK)	

• Fixture Section

RUN DATE : 96.10.09
NSP: Not Service Part

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		FIX	960-031J	FIXTURE	SVC FIXTURE	
		FIX1	6871R-0288A	PWB ASSY!	D-27 JIG (P-700M)	
		FIX2	6871R-0288B	PWB ASSY!	D-27 JIG (P-700M)	
		FIX3	6871R-0288C	PWB ASSY!	D-27 JIG (P-700M)	
		FIX4	6871R-0288D	PWB ASSY!	D-27 JIG (P-700M)	
		FIX5	6871R-0288E	PWB ASSY!	D-27 JIG (P-700M)	
		FIX6	322-065A	SUPPORTER	DECK SVC	
		FIX7	6871R-0746A	PWB ASSY–	SVC FIXTURE PRE-AMP(P914P)	

• Electrical Section

RUN DATE : 96.10.09

CAUTION: The * marks in the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list. Before replacing any of these components, read carefully the SAFETY PRECAUTIONS and SERVICING PRECAUTIONS in the manual. Do not degrade the safety of the unit through improper servicing.

Tolerance

Symbol	C	J	K	M	N	Z	P	A
%	±2	±5	±10	±20	±30	+80 -20	+100 -10	+100 -10

CC, CJ, CK: Capacitor, Ceramic
CE: Capacitor, Electrolytic
CQ: Capacitor, Polyester

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
CAPACITOR				
		C101	0CE4764H638	47M SRA 25V M FM5 TP(5)
		C102	0CN2230H948	0.022M 25V Z F TA26
		C103	0CE4766F638	47M SMS 16V M FM5 TP5
		C104	0CE4766F638	47M SMS 16V M FM5 TP5
		C105	0CE4766F638	47M SMS 16V M FM5 TP5
		C106	0CE4766K638	47M SMS 50V M FM5 TP
		C107	0CE1076D638	100M SMS 10V M FM5 TP(5)
		C108	0CE4766F638	47M SMS 16V M FM5 TP5
		C109	0CE4766F638	47M SMS 16V M FM5 TP5
		C110	0CE1076D638	100M SMS 10V M FM5 TP(5)
		C111	0CE1064F638	10M SRA 16V M FM5 TP(5)
		C301	0CN2230H948	0.022M 25V Z F TA26
		C302	0CE4764F638	47M SRA/SS 16V M FM5 TP(5)
		C303	0CN1040K948	0.1M 50V Z F TA26
		C304	0CN1030F678	0.01M 16V M Y TA26
		C305	0CE1064F638	10M SRA 16V M FM5 TP(5)
		C306	0CX3900K408	39P 50V J SL TA26
		C307	0CN1010K518	100P 50V K B TA26
		C308	0CN1810K518	180P 50V K B TA26
		C309	0CX2700K408	27P 50V J SL TA26
		C310	0CE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C311	0CN3910K518	390P 50V K B TA26
		C312	0CN1040K948	0.1M 50V Z F TA26
		C313	0CX4700K408	47P 50V J SL TA26
		C314	0CN4730K948	0.047M 50V Z F TA26
		C315	0CN1040K948	0.1M 50V Z F TA26
		C316	0CE1064F638	10M SRA 16V M FM5 TP(5)
		C317	0CN1040K948	0.1M 50V Z F TA26
		C318	0CN1030F678	0.01M 16V M Y TA26
		C319	0CE1064F638	10M SRA 16V M FM5 TP(5)
		C320	0CE4763F638	47M SRE 16V M FM5 TP(5)
		C321	0CN1030F678	0.01M 16V M Y TA26
		C322	0CE1064F638	10M SRA 16V M FM5 TP(5)
		C323	0CE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C324	0CN1030F678	0.01M 16V M Y TA26
		C325	0CN4730K948	0.047M 50V Z F TA26
		C326	0CN4730K948	0.047M 50V Z F TA26
		C327	0CN2230H948	0.022M 25V Z F TA26
		C328	0CE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C329	0CE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C330	0CE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C331	0CN2230H948	0.022M 25V Z F TA26
		C332	0CE4763F638	47M SRE 16V M FM5 TP(5)
		C333	0CE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C334	0CN4730K948	0.047M 50V Z F TA26
		C336	0CN2230H948	0.022M 25V Z F TA26
		C337	0CN2230H948	0.022M 25V Z F TA26
		C338	0CN2230H948	0.022M 25V Z F TA26
		C339	0CE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C340	0CE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C341	0CN1030F678	0.01M 16V M Y TA26
		C342	0CN1030F678	0.01M 16V M Y TA26
		C343	0CE4764F638	47M SRA/SS 16V M FM5 TP(5)
		C344	0CN2230H948	0.022M 25V Z F TA26
		C345	0CN1210K518	120P 50V K B TA26
		C346	0CN1040K948	0.1M 50V Z F TA26
		C347	0CE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C348	0CN1040K948	0.1M 50V Z F TA26
		C349	0CN1040K948	0.1M 50V Z F TA26
		C350	0CN2230H948	0.022M 25V Z F TA26
		C351	0CE4766F638	47M SMS 16V M FM5 TP5
		C352	0CE1064F638	10M SRA 16V M FM5 TP(5)
		C353	0CE1074C638	100M SRA 6.3V M FM5 TP(5)
		C354	0CE4766F638	47M SMS 16V M FM5 TP5
		C355	0CN2230H948	0.022M 25V Z F TA26
		C357	0CN1040K948	0.1M 50V Z F TA26
		C359	0CN2230H948	0.022M 25V Z F TA26
		C360	0CN2230H948	0.022M 25V Z F TA26
		C361	0CE4764F638	47M SRA/SS 16V M FM5 TP(5)
		C362	0CX2200K408	22P 50V J SL TP26
		C363	0CN1040K948	0.1M 50V Z F TA26
		C401	0CN1040K948	0.1M 50V Z F TA26
		C402	0CE4764F638	47M SRA/SS 16V M FM5 TP(5)
		C410	0CN1040K948	0.1M 50V Z F TA26
		C411	0CN1040K948	0.1M 50V Z F TA26
		C412	0CE1076D638	100M SMS 10V M FM5 TP(5)
		C413	0CN2230H948	0.022M 25V Z F TA26
		C414	0CE1064F638	10M SRA 16V M FM5 TP(5)
		C415	0CE1064F638	10M SRA 16V M FM5 TP(5)
		C416	0CE1064F638	10M SRA 16V M FM5 TP(5)
		C417	0CN1040K948	0.1M 50V Z F TA26
		C418	0CQ1031N409	0.01U 100V J POLY TP
		C419	0CE1064F638	10M SRA 16V M FM5 TP(5)
		C420	0CQ3331N409	0.033U 100V J POLY TP
		C421	0CQ1531N409	0.015U 100V J POLY TP
		C422	0CE1064F638	10M SRA 16V M FM5 TP(5)
		C423	0CE1064F638	10M SRA 16V M FM5 TP(5)
		C425	0CN2210K518	220P 50V K B TA26

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		C426	0CE4766F638	47M SMS 16V M FM5 TP5
		C427	0CN1040K948	0.1M 50V Z F TA26
		C428	0CN4720F668	4700P 16V M X TA26
		C429	0CE1064F638	10M SRA 16V M FM5 TP(5)
		C430	0CE1064F638	10M SRA 16V M FM5 TP(5)
		C431	0CE2254K638	2.2M SRA 50V M FM5 TP(5)
		C432	0CE1064F638	10M SRA 16V M FM5 TP(5)
		C433	0CE1064F638	10M SRA 16V M FM5 TP(5)
		C434	0CN4720F668	4700P 16V M X TA26
		C435	0CN1040K948	0.1M 50V Z F TA26
		C436	0CN2230H948	0.022M 25V Z F TA26
		C437	0CE1074F638	100U SRA 16V M FM5 TP(5)
		C438	0CE1064F638	10M SRA 16V M FM5 TP(5)
		C439	0CN2230H948	0.022M 25V Z F TA26
		C440	0CN2230H948	0.022M 25V Z F TA26
		C441	0CE2273C638	220M SRE 6.3V M FM5 TP(5)
		C442	0CN2230H948	0.022M 25V Z F TA26
		C443	0CN1040K948	0.1M 50V Z F TA26
		C445	0CE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C446	0CE1064F638	10M SRA 16V M FM5 TP(5)
		C448	0CE4764F638	47M SRA/SS 16V M FM5 TP(5)
		C449	0CE4766F638	47M SMS 16V M FM5 TP5
		C450	0CN1040K948	0.1M 50V Z F TA26
		C451	0CN1040K948	0.1M 50V Z F TA26
		C452	0CQ1031N409	0.01U 100V J POLY TP
		C453	0CQ1031N409	0.01U 100V J POLY TP
		C454	0CQ6831N409	0.068U 100V J POLY TP
		C455	0CN2210K518	220P 50V K B TA26
		C459	0CE4764F638	47M SRA/SS 16V M FM5 TP(5)
		C460	0CE1064F638	10M SRA 16V M FM5 TP(5)
		C461	0CN2230H948	0.022M 25V Z F TA26
		C462	0CE4766F638	47M SMS 16V M FM5 TP5
		C501	0CE1074F638	100U SRA 16V M FM5 TP(5)
		C502	0CN1020K518	1000P 50V K B TA26
		C503	0CN2230H948	0.022M 25V Z F TA26
		C504	0CC0300K115	3P 50V D NP0 TS
		C505	0CN2230H948	0.022M 25V Z F TA26
		C506	0CE1074F638	100U SRA 16V M FM5 TP(5)
		C507	0CN2230H948	0.022M 25V Z F TA26
		C508	0CE4764F638	47M SRA/SS 16V M FM5 TP(5)
		C509	0CN2230H948	0.022M 25V Z F TA26
		C510	0CE4764F638	47M SRA/SS 16V M FM5 TP(5)
		C511	0CN2230H948	0.022M 25V Z F TA26
		C512	0CE4764F638	47M SRA/SS 16V M FM5 TP(5)
		C513	0CN2230H948	0.022M 25V Z F TA26
		C514	624-027A	GOLD 0.047F-5.5V D13.0X8.5 NEC
		C515	0CN1030F678	0.01M 16V M Y TA26
		C516	0CN1040K948	0.1M 50V Z F TA26
		C517	0CE4774F638	470M SRA 16V M FM5 TP(5)
		C518	0CN1040K948	0.1M 50V Z F TA26
		C519	0CQ4711N449	470PF 100V J PP TP
		C520	0CN1040K948	0.1M 50V Z F TA26
		C521	0CE4754K638	4.7M SRA 50V M FM5 TP(5)
		C522	0CN1030F678	0.01M 16V M Y TA26
		C523	0CE1064F638	10M SRA 16V M FM5 TP(5)
		C525	0CN2710K518	270P 50V K B TA26
		C526	0CE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C528	0CN1040K948	0.1M 50V Z F TA26
		C529	0CE4754K638	4.7M SRA 50V M FM5 TP(5)
		C530	0CE4754K638	4.7M SRA 50V M FM5 TP(5)
		C531	0CN1030F678	0.01M 16V M Y TA26
		C532	0CN1510K518	150P 50V K B TA26
		C533	0CX3900K408	39P 50V J SL TA26
		C534	0CN2230H948	0.022M 25V Z F TA26
		C535	0CE4754K638	4.7M SRA 50V M FM5 TP(5)
		C536	0CN1040K948	0.1M 50V Z F TA26
		C537	0CC3300K415	33P 50V J NP0 TP
		C538	0CN1040K948	0.1M 50V Z F TA26
		C539	0CN2230H948	0.022M 25V Z F TA26
		C540	0CE4766F638	47M SMS 16V M FM5 TP5
		C541	0CN1040K948	0.1M 50V Z F TA26
		C542	0CN1040K948	0.1M 50V Z F TA26
		C543	0CN1030F678	0.01M 16V M Y TA26
		C544	0CN1030F678	0.01M 16V M Y TA26
		C545	0CN1030F678	0.01M 16V M Y TA26
		C546	0CN1040K948	0.1M 50V Z F TA26
		C547	0CN1040K948	0.1M 50V Z F TA26
		C548	0CN1020K518	1000P 50V K B TA26
		C549	0CN1040K948	0.1M 50V Z F TA26
		C550	0CC1500K415	15P 50V J NP0 TS
		C551	0CC1500K415	15P 50V J NP0 TS
		C552	0CC0800K115	8P 50V D NP0 TS
		C553	0CC0800K115	8P 50V D NP0 TS
		C555	0CN1040K948	0.1M 50V Z F TA26
		C556	0CN1040K948	0.1M 50V Z F TA26
		C557	0CE4766F638	47M SMS 16V M FM5 TP5
		C558	0CE1051K636	1.0U SM 50V M FM5 BP TP(D)
		C559	0CN1030F678	0.01M 16V M Y TA26
		C560	0CE4764F638	47M SRA/SS 16V M FM5 TP(5)
		C561	0CN2230H948	0.022M 25V Z F TA26
		C563	0CN1030F678	0.01M 16V M Y TA26
		C569	0CC3300K415	33P 50V J NP0 TP
		C570	0CC1000K115	10P 50V D NP0 TS
		C571	0CC1200K415	12P 50V J NP0 TS
		C573	0CN1010K518	100P 50V K B TA26
		C574	0CN1040K948	0.1M 50V Z F TA26
		C601	0CN1040K948	0.1M 50V Z F TA26
		C602	0CN1040K948	0.1M 50V Z F TA26
		C603	0CE4764F638	47M SRA/SS 16V M FM5 TP(5)
		C604	0CN3310K518	330P 50V K B TA26
		C605	0CN3310K518	330P 50V K B TA26
		C606	0CN1040K948	0.1M 50V Z F TA26
		C607	0CN1020K518	1000P 50V K B TA26
		C608	0CN1040K948	0.1M 50V Z F TA26
		C609	0CN1040K948	0.1M 50V Z F TA26
		C610	0CN1020K518	1000P 50V K B TA26
		C611	0CN1020K518	1000P 50V K B TA26
		C612	0CN1010K518	100P 50V K B TA26
		C613	0CE4764F638	47M SRA/SS 16V M FM5 TP(5)
		C614	0CN1030F678	0.01M 16V M Y TA26
		C701	0CE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C702	0CE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C703	0CN1030F678	0.01M 16V M Y TA26
		C704	0CE1066K638	10M SMS 50V M FM5 TP(5)
		C705	0CN2230H948	0.022M 25V Z F TA26
		C706	0CE4766F638	47M SMS 16V M FM5 TP5
		C707	0CN2230H948	0.022M 25V Z F TA26
		C708	0CN2230H948	0.022M 25V Z F TA26
		C709	0CE4774F638	470M SRA 16V M FM5 TP(5)
		C710	0CC2200K415	22P 50V J NP0 TS
		C712	0CE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C713	0CE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C715	0CE2256K638	2.2M SMS 50V M FM5 TP(5)
		C716	0CN2230H948	0.022M 25V Z F TA26

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		C717	0CE2256K638	2.2M SMS 50V M FM5 TP(5)
		C718	0CE2256K638	2.2M SMS 50V M FM5 TP(5)
		C720	0CE2273C638	220M SRE 6.3V M FM5 TP(5)
		C721	0CE4766F638	47M SMS 16V M FM5 TP5
		C722	0CN2230H948	0.022M 25V Z F TA26
		C723	0CN2230H948	0.022M 25V Z F TA26
		C724	0CN2230H948	0.022M 25V Z F TA26
		C725	0CE4766F638	47M SMS 16V M FM5 TP5
		C726	0CN2230H948	0.022M 25V Z F TA26
		C727	0CE1066H638	10M SMS 25V M FM5 TP
		C728	0CE4756K638	4.7M SMS 50V M FM5 TP(5)
		C729	0CE2256K638	2.2M SMS 50V M FM5 TP(5)
		C731	0CE4766F638	47M SMS 16V M FM5 TP5
		C732	0CX2200K408	22P 50V J SL TP26
		C733	0CN2230H948	0.022M 25V Z F TA26
		C734	0CN2230H948	0.022M 25V Z F TA26
		C735	0CE4766F638	47M SMS 16V M FM5 TP5
		C736	0CQ1231N409	0.012U 100V J POLY TP
		C737	0CQ1231N409	0.012U 100V J POLY TP
		C739	0CE1066H638	10M SMS 25V M FM5 TP
		C741	0CQ3921N409	0.0039U 100V J POLY TP
		C742	0CC4700K415	47P 50V J NP0 TP
		C743	0CE2256K638	2.2M SMS 50V M FM5 TP(5)
		C744	0CN1040K948	0.1M 50V Z F TA26
		C745	0CN1040K948	0.1M 50V Z F TA26
		C746	0CN1040K948	0.1M 50V Z F TA26
		C750	0CE1066H638	10M SMS 25V M FM5 TP
		C751	0CE2256K638	2.2M SMS 50V M FM5 TP(5)
		C752	0CX3300K408	33P 50V J SL TA26
		C753	0CC0400K015	4P 50V C NP0 TS
		C754	0CE4746K638	0.47M SMS 50V M TP(5)
		C755	0CE2256K638	2.2M SMS 50V M FM5 TP(5)
		C756	0CN1040K948	0.1M 50V Z F TA26
		C759	0CN2230H948	0.022M 25V Z F TA26
		C760	0CN2230H948	0.022M 25V Z F TA26
		C763	0CE4766F638	47M SMS 16V M FM5 TP5
		C764	0CN2230H948	0.022M 25V Z F TA26
		C765	0CQ1031N409	0.01U 100V J POLY TP
		C790	0CN2230H948	0.022M 25V Z F TA26
		C791	0CE4774F638	470M SRA 16V M FM5 TP(5)
		C792	0CN1020K518	1000P 50V K B TA26
		C801	0CN1030F678	0.01M 16V M Y TA26
		C803	0CN1040K948	0.1M 50V Z F TA26
		C804	0CN1040K948	0.1M 50V Z F TA26
		C805	0CN1040K948	0.1M 50V Z F TA26
		C806	0CX2700K408	27P 50V J SL TA26
		C807	0CX2700K408	27P 50V J SL TA26
		C808	0CN1040K948	0.1M 50V Z F TA26
		C809	0CN1040K948	0.1M 50V Z F TA26
		C810	0CX4700K408	47P 50V J SL TA26
		C811	0CX4700K408	47P 50V J SL TA26
		C812	0CN1040K948	0.1M 50V Z F TA26
		C813	0CN1030F678	0.01M 16V M Y TA26
		C814	0CN1030F678	0.01M 16V M Y TA26
		C815	0CX3900K408	39P 50V J SL TA26
		C816	0CN1030F678	0.01M 16V M Y TA26
		C817	0CN1010K518	100P 50V K B TA26
		C818	0CX3300K408	33P 50V J SL TA26
		C819	0CN3310K518	330P 50V K B TA26
		C820	0CN1030F678	0.01M 16V M Y TA26
		C821	0CN1030F678	0.01M 16V M Y TA26
		C822	0CX2700K408	27P 50V J SL TA26
		C823	0CN1030F678	0.01M 16V M Y TA26
		C824	0CN2230H948	0.022M 25V Z F TA26
		C825	0CE4764F638	47M SRA/SS 16V M FM5 TP(5)
		C826	0CN2230H948	0.022M 25V Z F TA26
		C827	0CE4764F638	47M SRA/SS 16V M FM5 TP(5)
		C828	0CX3300K408	33P 50V J SL TA26
		C829	0CX3300K408	33P 50V J SL TA26
		C830	0CN1010K518	100P 50V K B TA26
		C831	0CN1510K518	150P 50V K B TA26
		C832	0CX2700K408	27P 50V J SL TA26
		C833	0CN2230H948	0.022M 25V Z F TA26
		C834	0CN2230H948	0.022M 25V Z F TA26
		C835	0CE4764F638	47M SRA/SS 16V M FM5 TP(5)
		C836	0CN1030F678	0.01M 16V M Y TA26
		C837	0CN1030F678	0.01M 16V M Y TA26
		C838	0CN1020K518	1000P 50V K B TA26
		C840	0CE3354K638	3.3M SRA 50V M FM5 TP(5)
		C841	0CN1030F678	0.01M 16V M Y TA26
		C842	0CN1030F678	0.01M 16V M Y TA26
		C843	0CN2230H948	0.022M 25V Z F TA26
		C844	0CE4764F638	47M SRA/SS 16V M FM5 TP(5)
		C901	0CN1020K518	1000P 50V K B TA26
		C902	0CN1020K518	1000P 50V K B TA26
		C903	0CN2230H948	0.022M 25V Z F TA26
		C904	0CE4764F638	47M SRA/SS 16V M FM5 TP(5)
		C905	0CN2230H948	0.022M 25V Z F TA26
		C906	0CE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C907	0CQ4731N409	0.047U 100V J POLY TP
		C908	0CQ4731N409	0.047U 100V J POLY TP
		C909	0CN2230H948	0.022M 25V Z F TA26
		C910	0CE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C911	0CE4774C638	470M SRA 6.3V M FM5 TP(5)
		C912	0CE4774C638	470M SRA 6.3V M FM5 TP(5)
		C913	0CN2230H948	0.022M 25V Z F TA26
		C914	0CE4764F638	47M SRA/SS 16V M FM5 TP(5)
		C915	0CN1010K518	100P 50V K B TA26
		C916	0CE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C917	0CE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C918	0CE1064F638	10M SRA 16V M FM5 TP(5)
		C919	0CN4710K518	470P 50V K B TA26
		C920	0CN4710K518	470P 50V K B TA26
		C921	0CN4710K518	470P 50V K B TA26
		C922	0CN4710K518	470P 50V K B TA26
		C923	0CX1000K408	10P 50V J SL TA26
		C924	0CE4764F638	47M SRA/SS 16V M FM5 TP(5)
		C925	0CN2230H948	0.022M 25V Z F TA26
		C926	0CN1040K948	0.1M 50V Z F TA26
		C927	0CN1040K948	0.1M 50V Z F TA26
		C928	0CE1064F638	10M SRA 16V M FM5 TP(5)
		C929	0CE1064F638	10M SRA 16V M FM5 TP(5)
		C930	0CE1064F638	10M SRA 16V M FM5 TP(5)
		C931	0CE1064F638	10M SRA 16V M FM5 TP(5)
		C932	0CE1064F638	10M SRA 16V M FM5 TP(5)
		C933	0CE1064F638	10M SRA 16V M FM5 TP(5)
		C934	0CE1064F638	10M SRA 16V M FM5 TP(5)
		C935	0CE1064F638	10M SRA 16V M FM5 TP(5)
		C936	0CN4710K518	470P 50V K B TA26
		C937	0CN4710K518	470P 50V K B TA26
		C938	0CN4710K518	470P 50V K B TA26
		C939	0CN4710K518	470P 50V K B TA26
		C940	0CX1000K408	10P 50V J SL TA26
		C941	0CN1020K518	1000P 50V K B TA26

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		C942	0CN1020K518	1000P 50V K B TA26
		C943	0CE1064F638	10M SRA 16V M FM5 TP(5)
		C944	0CE1064F638	10M SRA 16V M FM5 TP(5)
		C945	0CE1064F638	10M SRA 16V M FM5 TP(5)
		C946	0CE1064F638	10M SRA 16V M FM5 TP(5)
		C947	0CN1040K948	0.1M 50V Z F TA26
		C948	0CN1040K948	0.1M 50V Z F TA26
		C949	0CN2230H948	0.022M 25V Z F TA26
		C950	0CE4764F638	47M SRA/SS 16V M FM5 TP(5)
		C9A1	0CN4710K518	470P 50V K B TA26
		C9A2	0CN4710K518	470P 50V K B TA26
		C9A3	0CN4710K518	470P 50V K B TA26
		C9A4	0CN4710K518	470P 50V K B TA26
		C9A5	0CN4710K518	470P 50V K B TA26
		C9A6	0CN4710K518	470P 50V K B TA26
		C9A7	0CN4710K518	470P 50V K B TA26
		C9A8	0CN4710K518	470P 50V K B TA26
		CP03	624-088B	ECQU2A104MV 0.1UF/250V MATSUSI
	OR	CP03	624-088C	R40KN31000001M 0.1UF/275V ARCO
		CP05	0CG2210U610	220 PF 400V M B R(NK,AD,SD)
		CP06	624-082F	CE 68UF/400V SHLVN
		CP07	0CQ1041N409	0.1U 100V J POLY TP
		CP09	0CQ5621N409	0.0056U 100V J POLY TP
		CP10	0CQ1021N409	0.001U 100V J POLY TP
		CP11	0CE336BH638	33UF KME 25V M FM5 TP5
		CP12	0CQ4731N409	0.047U 100V J POLY TP
		CP14	624-087A	HIGH-VOL 150P/1KV SMPS NEW-KOR
		CP15	0CQ1031Y501	0.01U 630V K POLY F5
		CP16	0CE4746K638	0.47M SMS 50V M TP(5)
	OR	CP17	624-084C	HER-0611-47-50-M SMPS RI-C
		CP17	624-085D	CE 47UF/50V KME (SMPS)
		CP18	0CE477BH638	470UF KME 25V M FM5 TP5
	OR	CP19	624-083E	1000/10V KME (SMPS) CE
		CP19	624-084N	HER-1016-1000-10-M SMPS RI-C
		CP20	0CE3376D638	330UF SMS 10V M FM5 TP5
	OR	CP21	624-084C	HER-0611-47-50-M SMPS RI-C
		CP21	624-085D	CE 47UF/50V KME (SMPS)
		CP22	0CE477BH638	470UF KME 25V M FM5 TP5
		CP24	0CG3920U632	3900 PF 400V M E FM(DE1510-1E)
		CP25	0CE107BD638	100000000 PF KME TYPE 10V M FM
		CP28	624-088B	ECQU2A104MV 0.1UF/250V MATSUSI
	OR	CP28	624-088C	R40KN31000001M 0.1UF/275V ARCO

DIODE

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
	OR	BDP01	0DD060000BA	DF06M,600V,1A G.I
		BDP01	0DD160000DA	S1WBA60(1A 600V) SHIDENKEN
		D101	0DD400309AB	IN4003A(1SR35-200A)5M/M TP ROH
		D102	0DD400309AB	IN4003A(1SR35-200A)5M/M TP ROH
		D302	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D305	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D309	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D311	0DD400309AB	IN4003A(1SR35-200A)5M/M TP ROH
		D312	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D3A1	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D401	0DD400309AB	IN4003A(1SR35-200A)5M/M TP ROH
		D501	0DD400309AB	IN4003A(1SR35-200A)5M/M TP ROH
		D502	0DD400309AB	IN4003A(1SR35-200A)5M/M TP ROH
		D503	0DD400309AB	IN4003A(1SR35-200A)5M/M TP ROH
		D506	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D507	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D508	0DD400309AB	IN4003A(1SR35-200A)5M/M TP ROH
		D509	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D510	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D603	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D605	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D610	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D616	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D630	0DD400309AB	IN4003A(1SR35-200A)5M/M TP ROH
		D631	0DD400309AB	IN4003A(1SR35-200A)5M/M TP ROH
		D901	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		DP01	0DD010009CA	EG01CW(R-FORM 5MM) TP SANKEN
		DP02	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		DP05	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		DP07	0DD207000AA	2A07 2A RECTIFIERS(T/S)DELTA
		DP08	0DD310400AB	31DQ04-(FC3,M20(FORM)) INTER
		DP10	0DD010009AC	EU01W(R-FORM) TP SANKEN
		DP12	0DD010009AC	EU01W(R-FORM) TP SANKEN
		DP13	0DD400000AD	RU4YXLF(015-305) M20 SANKEN
		DP17	0DD010009AC	EU01W(R-FORM) TP SANKEN

DISPLAY TUBE

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		DG601	514-040A	BJ366GK SEJIN

FUSE

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		FP01	585-011C	T 1.6A 250V S506

FILTER

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		FL401	616-069C	LPF 12KHZ(JH-1058) SAMMI
		FL705	616-714A	MKT40MA100P MURATA
		LP01	616-143E	LINE FILTER(UU1620),SAMHWA
		Z701	616-098A	SAW OFWG3203 SIEMENS
		Z702	616-036B	TRAP TPS5.5MB MURA
		Z703	616-036E	TRAP TPS5.74MB MURATA
		Z704	616-038D	CERAMIC SFT5.5MA MURATA
		Z705	616-038E	CERAMIC SFT5.74MA

IC

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		IC301	0ISA744900A	LA7449 Y/C (PAL)
		IC302	0ISA899700A	LC89970 (1H CCD) OC3600
		IC303	0ITO409400A	TC4094BP 8STAGE BUS REGIST
		IC401	0IPH961200A	TDA9612H HI-FI
		IC402	0IRH775500A	BA7755A(HEAD S/W)
		IC501	0IHI839776D	H8/3977(HD6433977SB32F)
		IC502	0IGS744500A	GL7445 (MOTOR DRIV-1CH) GSS
		IC503	0IAL241600B	AT24C16-10PC 8D EEPROM 16K
		IC504	0IMT523000B	PST-523G/T(3.3V) LOW
		IC505	0IDW358000A	DBL358 OP-AMP(DIP)
		IC601	0IRH287900A	
		IC701	0ITF447228A	TDA4472BFL SO28 VIF+SIF
		IC702	0ITF286014A	U2860B DIP14 FM DEMOD
		IC703	0IPH984000A	TDA9840 ST MATRIX
		IC801	0IMA336660A	AN3366SB A/V 6CH PRE AMP
		IC901	0ISG640000A	STV6400 S/W IC DIP
		IC902	0ISM564900A	SDA5649 (VPS+PDC)
		IC903	0IGS324000A	GL324 (QUAD PUPLE OP AMP)
	OR	ICP01	0IFE531100A	FA5311P PWM IC (FUJI) DIP
		ICP01	0ISS755200A	KA7552 PWMIC 8DIP 30V
		ICP03	0IKE431000A	KIA431 3 PIN TP
		RC601	668-227N	RECE 20MM KRM-68M KTC 38KHZ

JACK

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		JK601	6612RPV002C	JPJ1008,YL,(HOSIDEN)
		JK602	6612RPV002B	JPJ1008,WH,(HOSIDEN)
		JK603	6612RPV002A	JPJ1008,RD,(HOSIDEN)
		JK901	572-034C	PIN JPJ1022-01-030 (WH)
		JK902	572-034B	PIN JPJ1022-01-020 (RED)

COIL

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		BD601	636-004C	BEAD CORE BFS3550R2FD8,R T/P
		L303	0LA0822K018	82M K 2.3X3.4 L5 TP
		L304	0LR1000J025	100UH 5% 4X5 TR5
		L305	0LR1000J025	100UH 5% 4X5 TR5
		L306	0LR1000J025	100UH 5% 4X5 TR5
		L307	0LR1000J025	100UH 5% 4X5 TR5
		L308	0LA0332K018	33M K 2.3X3.4 L5 TP
		L309	0LR1000J025	100UH 5% 4X5 TR5
		L310	0LR1000J025	100UH 5% 4X5 TR5
		L311	0LR1000J025	100UH 5% 4X5 TR5
		L401	0LR1000J025	100UH 5% 4X5 TR5
		L402	0LR1502J045	0.015H J 6X7 L5 TP
		L404	0LR1000J025	100UH 5% 4X5 TR5
		L406	0LR1000J025	100UH 5% 4X5 TR5
		L407	0LR1000J025	100UH 5% 4X5 TR5
		L501	0LR1000J025	100UH 5% 4X5 TR5
		L502	0LR1000K035	100M K 6X6 L5 TP
		L503	0LR1000K035	100M K 6X6 L5 TP
		L504	0LR1000K035	100M K 6X6 L5 TP
		L505	635-027C	EL0405RA SKI150G-3 K-TDK 15UH
		L506	0LA0332K018	33M K 2.3X3.4 L5 TP
		L508	0LR1000J025	100UH 5% 4X5 TR5
		L509	0LR1000J025	100UH 5% 4X5 TR5
		L510	0LR1000J025	100UH 5% 4X5 TR5
		L601	0LR1000J035	100M J 6X6 L5 TP
		L602	0LA1000K018	100M K 2.3X3.4 L5 TP
		L603	0LA1000K018	100M K 2.3X3.4 L5 TP
		L604	0LR1000J035	100M J 6X6 L5 TP
		L701	0LR1000J025	100UH 5% 4X5 TR5
		L702	0LR1000J025	100UH 5% 4X5 TR5
		L703	0LR4700K035	470M K 6X6 L5 TP
		L704	0LA0121K018	1.2M K 2.3X3.4 L5 TP
		L705	0LR1000J025	100UH 5% 4X5 TR5
		L706	0LR2201J045	2200M J 6X7 L5 TP
		L709	0LA0121K018	1.2M K 2.3X3.4 L5 TP
		L710	0LR1000J025	100UH 5% 4X5 TR5
		L713	0LR1000J025	100UH 5% 4X5 TR5
		L714	0LA0332K018	33M K 2.3X3.4 L5 TP
		L715	0LA0102K018	10M K 2.3X3.4 L5 TP
		L718	0LR1000J025	100UH 5% 4X5 TR5
		L802	0LA0472K018	47M K 2.3X3.4 L5 TP
		L803	0LA0681K018	6.8M K 2.3X3.4 L5 TP
		L804	0LA0152K018	15M K 2.3X3.4 L5 TP
		L805	0LA1800K018	180M K 2.3X3.4 L5 TP
		L806	0LR3300J025	330UH 5% 4X5 TR5
		L807	0LR1000J025	100UH 5% 4X5 TR5
		L808	0LR1000J025	100UH 5% 4X5 TR5
		L809	0LA0152K018	15M K 2.3X3.4 L5 TP
		L810	0LA0222K018	22M K 2.3X3.4 L5 TP
		L811	0LA0822K018	82M K 2.3X3.4 L5 TP
		L812	0LA2700K018	270U K 2.3X3.4 L5 TP
		L813	0LR1000J025	100UH 5% 4X5 TR5
		L814	0LR1000J025	100UH 5% 4X5 TR5
		L901	0LA1000K018	100M K 2.3X3.4 L5 TP
		L902	0LA1000K018	100M K 2.3X3.4 L5 TP
		L903	0LR1000J025	100UH 5% 4X5 TR5
		L904	0LR1000J025	100UH 5% 4X5 TR5
		L905	0LA1000K018	100M K 2.3X3.4 L5 TP
		L906	0LA1000K018	100M K 2.3X3.4 L5 TP
		L907	0LA1000K018	100M K 2.3X3.4 L5 TP
		L908	0LA1000K018	100M K 2.3X3.4 L5 TP
		L909	0LA0821K018	8.2M K 2.3X3.4 L5 TP
		L910	0LR1000J025	100UH 5% 4X5 TR5
		L911	0LA1000K018	100M K 2.3X3.4 L5 TP
		L912	0LA1000K018	100M K 2.3X3.4 L5 TP
		L913	0LA1000K018	100M K 2.3X3.4 L5 TP
		L914	0LA1000K018	100M K 2.3X3.4 L5 TP
		L915	0LA0821K018	8.2M K 2.3X3.4 L5 TP
		L916	0LR1000J025	100UH 5% 4X5 TR5
		LP03	633-088D	CHOCK ,20UH,LEAD CUT
		LP04	633-088D	CHOCK ,20UH,LEAD CUT
		T401	633-032G	BIAS OSC(KWANGSUNG)
		T701	633-112A	CAN TOKO-K P910P

LED

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		LED501	0DL380009AA	GL380JTP IR LED D-27 TP SHARP

CIRCUIT BOARD ASSEMBLY

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		PBI00	6871RK0514A	IF
		PBM00	6871R-0508H	MAIN
		PBS00	6871R-0512A	SCART (P90P)
		PBT00	6871RK0542C	TIMER

TRANSFORMER

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		PTP01	642-023B	S/W TRANS EER2828(NEW)

TRANSISTOR

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
	OR	FEP01	0TF903000AA	2SK903M(FET) FUJI
		FEP01	0TF903000AB	2SK903MR,FUJI
		Q101	0TR141400AA	KTD1414 POWER (220 PACK) KEC
		Q102	0TR141400AA	KTD1414 POWER (220 PACK) KEC
		Q103	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q104	0TR126809BA	KTA1268-BL TP KEC
		Q105	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q106	0TR320509AB	KTC3205-TP-Y (KTC2236A)KEC
		Q107	0TR320509AB	KTC3205-TP-Y (KTC2236A)KEC
		Q108	0TR103009AF	KRA103M-TP (KRA2203) KEC
		Q301	0TR319909AF	KTC3199-BL MINI TP KEC
		Q302	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q304	0TR319909AF	KTC3199-BL MINI TP KEC
		Q305	0TR126709AC	KTA1267-GR MINI TP KEC
		Q309	0TR126709AC	KTA1267-GR MINI TP KEC
		Q310	0TR126709AC	KTA1267-GR MINI TP KEC
		Q311	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q312	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q401	0TR320509AB	KTC3205-TP-Y (KTC2236A)KEC
		Q402	0TR126709AC	KTA1267-GR MINI TP KEC
		Q403	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q404	0TR320509AB	KTC3205-TP-Y (KTC2236A)KEC
		Q405	0TR319909AF	KTC3199-BL MINI TP KEC
		Q504	0TR126709AC	KTA1267-GR MINI TP KEC
		Q508	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q509	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q510	0TR319909AF	KTC3199-BL MINI TP KEC
		Q511	0TR103009AF	KRA103M-TP (KRA2203) KEC

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		Q512	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q513	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q515	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q516	0TR126709AC	KTA1267-GR MINI TP KEC
		Q517	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q518	0TR126709AC	KTA1267-GR MINI TP KEC
		Q701	0TR319909AF	KTC3199-BL MINI TP KEC
		Q702	0TR319909AF	KTC3199-BL MINI TP KEC
		Q703	0TR126709AC	KTA1267-GR MINI TP KEC
		Q709	0TR319709AC	KTC3197 (KTC388A) TP KEC
		Q713	0TR319909AF	KTC3199-BL MINI TP KEC
		Q714	0TR319909AF	KTC3199-BL MINI TP KEC
		Q801	0TR319909AF	KTC3199-BL MINI TP KEC
		Q802	0TR319909AF	KTC3199-BL MINI TP KEC
		Q803	0TR319909AF	KTC3199-BL MINI TP KEC
		Q804	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q805	0TR319909AF	KTC3199-BL MINI TP KEC
		Q806	0TR319909AF	KTC3199-BL MINI TP KEC
		Q807	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q808	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q809	0TR319909AF	KTC3199-BL MINI TP KEC
		Q901	0TR319909AF	KTC3199-BL MINI TP KEC
		Q902	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q903	0TR103009AF	KRA103M-TP (KRA2203) KEC
		Q904	0TR319909AF	KTC3199-BL MINI TP KEC
		Q905	0TR319909AF	KTC3199-BL MINI TP KEC
		Q906	0TR126709AC	KTA1267-GR MINI TP KEC
		Q907	0TR126709AC	KTA1267-GR MINI TP KEC

RESISTOR

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		R101	0RD6801F608	6.8K 1/6W 5 TA26
		R102	0RD1002F608	10K 1/6W 5 TA26
		R104	0RD1001F608	1.0K 1/6W 5 TA26
		R105	0RD1001F608	1.0K 1/6W 5 TA26
		R106	0RD6801F608	6.8K 1/6W 5 TA26
		R107	0RD1001F608	1.0K 1/6W 5 TA26
		R108	0RD3302F608	33K 1/6W 5 TA26
		R110	0RD4700F608	470 1/6W 5 TA26
		R301	0RD1200F608	120 1/6W 5 TA26
		R303	0RD6800F608	680 1/6W 5 TA26
		R304	0RD1002F608	10K 1/6W 5 TA26
		R305	0RD2202F608	22K 1/6W 5 TA26
		R306	0RD4700F608	470 1/6W 5 TA26
		R307	0RD3900F608	390 1/6W 5 TA26
		R308	0RD1001F608	1.0K 1/6W 5 TA26
		R310	0RD1001F608	1.0K 1/6W 5 TA26
		R311	0RD3301F608	3.3K 1/6W 5 TA26
		R312	0RD4701F608	4.7K 1/6W 5 TA26
		R313	0RD1801F608	1.8K 1/6W 5 TA26
		R314	0RD1001F608	1.0K 1/6W 5 TA26
		R315	0RD2201F608	2.2K 1/6W 5 TA26
		R316	0RD2701F608	2.7K 1/6W 5 TA26
		R317	0RD6800F608	680 1/6W 5 TA26
		R318	0RD1001F608	1.0K 1/6W 5 TA26
		R319	0RD1202F608	12K 1/6W 5 TA26
		R320	0RD2202F608	22K 1/6W 5 TA26
		R322	0RD4700F608	470 1/6W 5 TA26
		R323	0RD2701F608	2.7K 1/6W 5 TA26
		R325	0RD0562F608	56 1/6W 5 TA26
		R326	0RD1001F608	1.0K 1/6W 5 TA26
		R327	0RD8201F608	8.2K 1/6W 5 TA26
		R328	0RD1801F608	1.8K 1/6W 5 TA26
		R329	0RD5601F608	5.6K 1/6W 5 TA26
		R330	0RD6801F608	6.8K 1/6W 5 TA26
		R331	0RD5601F608	5.6K 1/6W 5 TA26
		R332	0RD5601F608	5.6K 1/6W 5 TA26
		R333	0RD4701F608	4.7K 1/6W 5 TA26
		R335	0RD1001F608	1.0K 1/6W 5 TA26
		R336	0RD8202F608	82K 1/6W 5 TA26
		R338	0RD1800F608	180 1/6W 5 TA26
		R339	0RD1500F608	150 1/6W 5 TA26
		R340	0RD2702F608	27K 1/6W 5 TA26
		R341	0RD1802F608	18K 1/6W 5 TA26
		R342	0RD4701F608	4.7K 1/6W 5 TA26
		R343	0RD4701F608	4.7K 1/6W 5 TA26
		R400	0RD0102F608	10 1/6W 5 TA26
		R401	0RD3304F608	3.3M 1/6W 5 TA26
		R402	0RD1002F608	10K 1/6W 5 TA26
		R403	0RD1002F608	10K 1/6W 5 TA26
		R404	0RD3304F608	3.3M 1/6W 5 TA26
		R405	0RD4700F608	470 1/6W 5 TA26
		R406	0RD2200F608	220 1/6W 5 TA26
		R407	0RD2202F608	22K 1/6W 5 TA26
		R408	0RD2202F608	22K 1/6W 5 TA26
		R409	0RD1803F608	180K 1/6W 5 TA26
		R410	0RD1802F608	18K 1/6W 5 TA26
		R411	0RD8201F608	8.2K 1/6W 5 TA26
		R412	0RD5601F608	5.6K 1/6W 5 TA26
		R413	0RD2202F608	22K 1/6W 5 TA26
		R414	0RD1001F608	1.0K 1/6W 5 TA26
		R415	0RD2701F608	2.7K 1/6W 5 TA26
		R418	0RD2201F608	2.2K 1/6W 5 TA26
		R419	0RD1001F608	1.0K 1/6W 5 TA26
		R420	0RD0472F608	47 1/6W 5 TA26
		R421	0RD3902F608	39K 1/6W 5 TA26
		R422	0RD0102F608	10 1/6W 5 TA26
		R424	0RD2702F608	27K 1/6W 5 TA26
		R431	0RD1001F608	1.0K 1/6W 5 TA26
		R432	0RD1003F608	100K 1/6W 5 TA26
		R434	0RD5600F608	560 1/6W 5 TA26
		R436	0RD1001F608	1.0K 1/6W 5 TA26
		R501	0RD0681F608	6.8 1/6W 5 TA26
		R502	0RD0681F608	6.8 1/6W 5 TA26
		R503	0RD1000F608	100 1/6W 5 TA26
		R504	0RD3900F608	390 1/6W 5 TA26
		R505	0RD1202F608	12K 1/6W 5 TA26
		R509	0RD1001F608	1.0K 1/6W 5 TA26
		R513	0RD1002F608	10K 1/6W 5 TA26
		R516	0RD5600F608	560 1/6W 5 TA26
		R517	0RD5600F608	560 1/6W 5 TA26
		R518	0RD1002F608	10K 1/6W 5 TA26
		R519	0RD2703F608	270K 1/6W 5 TA26
		R520	0RD1004F608	1.0M 1/6W 5 TA26
		R521	0RD1001F608	1.0K 1/6W 5 TA26
		R522	0RD1803F608	180K 1/6W 5 TA26
		R523	0RD1801F608	1.8K 1/6W 5 TA26
		R524	0RD2201F608	2.2K 1/6W 5 TA26
		R525	0RD4701F608	4.7K 1/6W 5 TA26
		R527	0RN1001F408	1.0K 1/6W 1 TA26
		R528	0RD1004F608	1.0M 1/6W 5 TA26
		R529	0RD6801F608	6.8K 1/6W 5 TA26
		R530	0RD3302F608	33K 1/6W 5 TA26
		R531	0RD1002F608	10K 1/6W 5 TA26
		R532	0RD2200F608	220 1/6W 5 TA26

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		R533	0RD2200F608	220 1/6W 5 TA26
		R534	0RD3302F608	33K 1/6W 5 TA26
		R535	0RD2200F608	220 1/6W 5 TA26
		R536	0RD2200F608	220 1/6W 5 TA26
		R537	0RD2200F608	220 1/6W 5 TA26
		R538	0RD2200F608	220 1/6W 5 TA26
		R539	0RD1002F608	10K 1/6W 5 TA26
		R540	0RD1202F608	12K 1/6W 5 TA26
		R541	0RD1202F608	12K 1/6W 5 TA26
		R542	0RD1003F608	100K 1/6W 5 TA26
		R543	0RD1002F608	10K 1/6W 5 TA26
		R544	0RD1001F608	1.0K 1/6W 5 TA26
		R545	0RD1001F608	1.0K 1/6W 5 TA26
		R546	0RD1001F608	1.0K 1/6W 5 TA26
		R547	0RD5101F608	5.1K 1/6W 5 TA26
		R548	0RD4701F608	4.7K 1/6W 5 TA26
		R549	0RD4701F608	4.7K 1/6W 5 TA26
		R550	0RD4702F608	47K 1/6W 5 TA26
		R551	0RD1802F608	18K 1/6W 5 TA26
		R552	0RD5601F608	5.6K 1/6W 5 TA26
		R553	0RD5601F608	5.6K 1/6W 5 TA26
		R554	0RD0101F608	1.0 1/6W 5 TA26
		R555	0RD0101F608	1.0 1/6W 5 TA26
		R556	0RD5601F608	5.6K 1/6W 5 TA26
		R557	0RD5601F608	5.6K 1/6W 5 TA26
		R558	0RD4701F608	4.7K 1/6W 5 TA26
		R559	0RD1002F608	10K 1/6W 5 TA26
		R560	0RD2202F608	22K 1/6W 5 TA26
		R561	0RD1503F608	150K 1/6W 5 TA26
		R562	0RD4703F608	470K 1/6W 5 TA26
		R563	0RD1004F608	1.0M 1/6W 5 TA26
		R564	0RD4701F608	4.7K 1/6W 5 TA26
		R565	0RD4701F608	4.7K 1/6W 5 TA26
		R566	0RD4701F608	4.7K 1/6W 5 TA26
		R567	0RD4701F608	4.7K 1/6W 5 TA26
		R569	0RD1002F608	10K 1/6W 5 TA26
		R570	0RD1002F608	10K 1/6W 5 TA26
		R577	0RD6800F608	680 1/6W 5 TA26
		R578	0RD5600F608	560 1/6W 5 TA26
		R579	0RD4701F608	4.7K 1/6W 5 TA26
		R580	0RD4701F608	4.7K 1/6W 5 TA26
		R581	0RD4701F608	4.7K 1/6W 5 TA26
		R582	0RD4701F608	4.7K 1/6W 5 TA26
		R583	0RD4701F608	4.7K 1/6W 5 TA26
		R584	0RD4701F608	4.7K 1/6W 5 TA26
		R585	0RD4701F608	4.7K 1/6W 5 TA26
		R586	0RD4701F608	4.7K 1/6W 5 TA26
		R587	0RD4701F608	4.7K 1/6W 5 TA26
		R588	0RD4701F608	4.7K 1/6W 5 TA26
		R589	0RD4701F608	4.7K 1/6W 5 TA26
		R590	0RD4701F608	4.7K 1/6W 5 TA26
		R591	0RD4701F608	4.7K 1/6W 5 TA26
		R592	0RD4701F608	4.7K 1/6W 5 TA26
		R593	0RD6801F608	6.8K 1/6W 5 TA26
		R594	0RD1502F608	15K 1/6W 5 TA26
		R595	0RD1502F608	15K 1/6W 5 TA26
		R596	0RD1501F608	1.5K 1/6W 5 TA26
		R597	0RD3902F608	39K 1/6W 5 TA26
		R598	0RD1001F608	1.0K 1/6W 5 TA26
		R599	0RD4703F608	470K 1/6W 5 TA26
		R601	0RD1002F608	10K 1/6W 5 TA26
		R602	0RD4701F608	4.7K 1/6W 5 TA26

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		R603	0RD2701F608	2.7K 1/6W 5 TA26
		R604	0RD1801F608	1.8K 1/6W 5 TA26
		R605	0RD1201F608	1.2K 1/6W 5 TA26
		R606	0RD1001F608	1.0K 1/6W 5 TA26
		R607	0RD6800F608	680 1/6W 5 TA26
		R608	0RD8200F608	820 1/6W 5 TA26
		R609	0RD4701F608	4.7K 1/6W 5 TA26
		R610	0RD5602F608	56K 1/6W 5 TA26
		R611	0RD5602F608	56K 1/6W 5 TA26
		R612	0RD5602F608	56K 1/6W 5 TA26
		R613	0RD5602F608	56K 1/6W 5 TA26
		R614	0RD1002F608	10K 1/6W 5 TA26
		R615	0RD1002F608	10K 1/6W 5 TA26
		R616	0RD2203F608	220K 1/6W 5 TA26
		R617	0RD1002F608	10K 1/6W 5 TA26
		R618	0RD0752F608	75 1/6W 5 TA26
		R701	0RD1003F608	100K 1/6W 5 TA26
		R702	0RD8202F608	82K 1/6W 5 TA26
		R703	0RD4700F608	470 1/6W 5 TA26
		R704	0RD1001F608	1.0K 1/6W 5 TA26
		R705	0RD1001F608	1.0K 1/6W 5 TA26
		R706	0RD1001F608	1.0K 1/6W 5 TA26
		R707	0RD5601F608	5.6K 1/6W 5 TA26
		R708	0RD5601F608	5.6K 1/6W 5 TA26
		R709	0RD5601F608	5.6K 1/6W 5 TA26
		R710	0RD1003F608	100K 1/6W 5 TA26
		R711	0RD2202F608	22K 1/6W 5 TA26
		R714	0RD1000F608	100 1/6W 5 TA26
		R715	0RD2201F608	2.2K 1/6W 5 TA26
		R723	0RD1002F608	10K 1/6W 5 TA26
		R724	0RD4701F608	4.7K 1/6W 5 TA26
		R725	0RD1501F608	1.5K 1/6W 5 TA26
		R726	0RD1501F608	1.5K 1/6W 5 TA26
		R727	0RD1000F608	100 1/6W 5 TA26
		R729	0RD1802F608	18K 1/6W 5 TA26
		R731	0RD2700F608	270 1/6W 5 TA26
		R732	0RD2200F608	220 1/6W 5 TA26
		R734	0RD1001F608	1.0K 1/6W 5 TA26
		R735	0RD1801F608	1.8K 1/6W 5 TA26
		R736	0RD2702F608	27K 1/6W 5 TA26
		R737	0RD2702F608	27K 1/6W 5 TA26
		R738	0RD5600F608	560 1/6W 5 TA26
		R739	0RD5600F608	560 1/6W 5 TA26
		R740	0RD2700F608	270 1/6W 5 TA26
		R741	0RD1201F608	1.2K 1/6W 5 TA26
		R742	0RD2200F608	220 1/6W 5 TA26
		R745	0RD5601F608	5.6K 1/6W 5 TA26
		R746	0RD5601F608	5.6K 1/6W 5 TA26
		R748	0RD1001F608	1.0K 1/6W 5 TA26
		R749	0RD1802F608	18K 1/6W 5 TA26
		R750	0RD1802F608	18K 1/6W 5 TA26
		R752	0RD2702F608	27K 1/6W 5 TA26
		R753	0RD2202F608	22K 1/6W 5 TA26
		R754	0RD5602F608	56K 1/6W 5 TA26
		R756	0RD1802F608	18K 1/6W 5 TA26
		R757	0RD1802F608	18K 1/6W 5 TA26
		R758	0RD1000F608	100 1/6W 5 TA26
		R761	0RD1000F608	100 1/6W 5 TA26
		R801	0RD0122F608	12 1/6W 5 TA26
		R802	0RD2700F608	270 1/6W 5 TA26
		R803	0RD6801F608	6.8K 1/6W 5 TA26
		R804	0RD2201F608	2.2K 1/6W 5 TA26

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		R805	0RD2201F608	2.2K 1/6W 5 TA26
		R806	0RD3900F608	390 1/6W 5 TA26
		R807	0RD3900F608	390 1/6W 5 TA26
		R808	0RD8200F608	820 1/6W 5 TA26
		R809	0RD5601F608	5.6K 1/6W 5 TA26
		R810	0RD2201F608	2.2K 1/6W 5 TA26
		R811	0RD8200F608	820 1/6W 5 TA26
		R812	0RD4700F608	470 1/6W 5 TA26
		R813	0RD4700F608	470 1/6W 5 TA26
		R814	0RD8200F608	820 1/6W 5 TA26
		R815	0RD1001F608	1.0K 1/6W 5 TA26
		R816	0RD1001F608	1.0K 1/6W 5 TA26
		R817	0RD2702F608	27K 1/6W 5 TA26
		R818	0RD1802F608	18K 1/6W 5 TA26
		R819	0RD5600F608	560 1/6W 5 TA26
		R820	0RD5600F608	560 1/6W 5 TA26
		R821	0RD2701F608	2.7K 1/6W 5 TA26
		R822	0RD6800F608	680 1/6W 5 TA26
		R823	0RD2202F608	22K 1/6W 5 TA26
		R824	0RD6801F608	6.8K 1/6W 5 TA26
		R825	0RD2201F608	2.2K 1/6W 5 TA26
		R826	0RD1001F608	1.0K 1/6W 5 TA26
		R827	0RD5601F608	5.6K 1/6W 5 TA26
		R828	0RD2201F608	2.2K 1/6W 5 TA26
		R829	0RD2201F608	2.2K 1/6W 5 TA26
		R830	0RD1001F608	1.0K 1/6W 5 TA26
		R831	0RD2701F608	2.7K 1/6W 5 TA26
		R832	0RD1802F608	18K 1/6W 5 TA26
		R834	0RD1001F608	1.0K 1/6W 5 TA26
		R835	0RD1201F608	1.2K 1/6W 5 TA26
		R901	0RD1801F608	1.8K 1/6W 5 TA26
		R902	0RD1201F608	1.2K 1/6W 5 TA26
		R903	0RD1801F608	1.8K 1/6W 5 TA26
		R904	0RD1201F608	1.2K 1/6W 5 TA26
		R905	0RD4700F608	470 1/6W 5 TA26
		R906	0RD1001F608	1.0K 1/6W 5 TA26
		R907	0RD1004F608	1.0M 1/6W 5 TA26
		R908	0RD8202F608	82K 1/6W 5 TA26
		R909	0RD6801F608	6.8K 1/6W 5 TA26
		R910	0RD5603F608	560K 1/6W 5 TA26
		R911	0RD6801F608	6.8K 1/6W 5 TA26
		R912	0RD5603F608	560K 1/6W 5 TA26
		R913	0RD1001F608	1.0K 1/6W 5 TA26
		R916	0RD0752F608	75 1/6W 5 TA26
		R917	0RD0752F608	75 1/6W 5 TA26
		R918	0RD0752F608	75 1/6W 5 TA26
		R919	0RD1003F608	100K 1/6W 5 TA26
		R920	0RD0752F608	75 1/6W 5 TA26
		R921	0RD1001F608	1.0K 1/6W 5 TA26
		R922	0RD6802F608	68K 1/6W 5 TA26
		R923	0RD6802F608	68K 1/6W 5 TA26
		R924	0RD5602F608	56K 1/6W 5 TA26
		R925	0RD5602F608	56K 1/6W 5 TA26
		R926	0RD6802F608	68K 1/6W 5 TA26
		R927	0RD6802F608	68K 1/6W 5 TA26
		R928	0RD1001F608	1.0K 1/6W 5 TA26
		R929	0RD8202F608	82K 1/6W 5 TA26
		R930	0RD8202F608	82K 1/6W 5 TA26
		R931	0RD5602F608	56K 1/6W 5 TA26
		R932	0RD5602F608	56K 1/6W 5 TA26
		R933	0RD8202F608	82K 1/6W 5 TA26
		R934	0RD8202F608	82K 1/6W 5 TA26

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		R935	0RD1001F608	1.0K 1/6W 5 TA26
		R936	0RD1001F608	1.0K 1/6W 5 TA26
		R937	0RD8202F608	82K 1/6W 5 TA26
		R938	0RD8202F608	82K 1/6W 5 TA26
		R939	0RD8202F608	82K 1/6W 5 TA26
		R940	0RD8202F608	82K 1/6W 5 TA26
		R941	0RD1001F608	1.0K 1/6W 5 TA26
		R942	0RD1001F608	1.0K 1/6W 5 TA26
		R943	0RD1001F608	1.0K 1/6W 5 TA26
		R944	0RD1802F608	18K 1/6W 5 TA26
		R945	0RD1802F608	18K 1/6W 5 TA26
		R946	0RD1802F608	18K 1/6W 5 TA26
		R947	0RD1802F608	18K 1/6W 5 TA26
		R948	0RD1502F608	15K 1/6W 5 TA26
		R949	0RD1502F608	15K 1/6W 5 TA26
		R950	0RD1001F608	1.0K 1/6W 5 TA26
		R951	0RD1001F608	1.0K 1/6W 5 TA26
		R952	0RD1502F608	15K 1/6W 5 TA26
		R953	0RD1502F608	15K 1/6W 5 TA26
		R954	0RD1001F608	1.0K 1/6W 5 TA26
		R955	0RD1001F608	1.0K 1/6W 5 TA26
		R956	0RD2702F608	27K 1/6W 5 TA26
		R957	0RD3902F608	39K 1/6W 5 TA26
		R958	0RD1001F608	1.0K 1/6W 5 TA26
		R967	0RD1500F608	150 1/6W 5 TA26
		R968	0RD1500F608	150 1/6W 5 TA26
		RP01	614-007A	2.7/2W CEMENT SMPS V
		RP02	0RD4702F608	47K 1/6W 5 TA26
		RP03	0RD4702F608	47K 1/6W 5 TA26
		RP04	614-006B	MOS(SMALL)M15 FORM 0.47,2W,5%
		RP07	0RD1800F608	180 1/6W 5 TA26
		RP08	0RD0752F608	75 1/6W 5 TA26
		RP09	0RD0222F608	22 1/6W 5 TA26
		RP10	0RD5101F608	5.1K 1/6W 5 TA26
		RP13	0RD1800F608	180 1/6W 5 TA26
		RP14	614-006C	MOS(SMALL)M15 FORM 56K,2W,5%
		RP15	0RD2201F608	2.2K 1/6W 5 TA26
		RP16	0RN3301F408	3.3K 1/6W 1 TA26
		RP17	0RD3300F608	330 1/6W 5 TA26
		RP18	0RD1001F608	1.0K 1/6W 5 TA26
		RP19	0RN4701F408	4.7K 1/6W 1 TA26
		RP20	0RD0222F608	22 1/6W 5 TA26
		RP21	0RD1003F608	100K 1/6W 5 TA26
		W702	0RD1500F608	150 1/6W 5 TA26

SENSOR

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		ICP02	657-061B	PHOTO COUPLER PS2561-1-V NEC
	OR	ICP02	657-062B	PC123Y PHOTO-COUPLER(SARPH)
		S501	340-075B	ASSY E/SENSOR(ROBOT)
		S502	340-075B	ASSY E/SENSOR(ROBOT)
		S503	657-043A	REEL SG233 D-27 KOTECO
		S504	657-043A	REEL SG233 D-27 KOTECO

SCART

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		JK903	573-019A	RGB SOCKET (BRS-03S) ANGLE
		JK904	573-006D	RGB (BLUE)

SWITCH

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		SW501	556-243D	F/L S/W,MPU10400(MIC),D-27
		SW502	556-244A	REC S/W,MPU10105MMBO,MIC

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		SW601	556-266A	TACK S/W,EVQ-21305R(MATSUSHID)
		SW602	556-266A	TACK S/W,EVQ-21305R(MATSUSHID)
		SW603	556-266A	TACK S/W,EVQ-21305R(MATSUSHID)
		SW604	556-266A	TACK S/W,EVQ-21305R(MATSUSHID)
		SW605	556-266A	TACK S/W,EVQ-21305R(MATSUSHID)
		SW606	556-266A	TACK S/W,EVQ-21305R(MATSUSHID)
		SW607	556-266A	TACK S/W,EVQ-21305R(MATSUSHID)
		SW608	556-266A	TACK S/W,EVQ-21305R(MATSUSHID)
		SW609	556-266A	TACK S/W,EVQ-21305R(MATSUSHID)

TUNER

		TU701	521-407A	F/S HYPER ENV578F0G3 MATHUSHI

VARIABLE RESISTOR

		VR401	613-029U	VARIABLE EVN-CYY A03B15-100K
		VR501	613-029N	VARIABLE EVN-CYY A03B14-10K
		VR701	613-003M	RH0614C100 103
		VR702	613-003K	RH0614C100 472

CRYSTAL

		X301	529-020P	4.433619MHZ 15PPM GRAY L=4.0
		X501	529-022V	17.734476MHZ CL-12P 25PPM LEAD
		X502	529-001K	32.768KHZ 3*8 SEIKO (20PPM)
		X503	529-020I	10.000000MHZ 30PPM NO-TU L=4.0
		X701	529-020I	10.000000MHZ 30PPM NO-TU L=4.0

ZENER DIODE

		DP03	0DZ220009ED	MTZ22B T-77 TP ROHM
		ZD101	0DZ130009AB	MTZ13C TP ROHM-K
		ZD102	0DZ560009CA	MTZ5.6B TP ROHM-K
		ZD103	0DZ620009AA	MTZ6.2B (TA)
		ZD104	0DZ330009AF	MTZ33B,TP,ROHM-K
		ZD105	0DZ150009BA	MTZ15A TP ROHM-K
		ZD401	0DZ100009AA	MTZ10B MINI TP ROHM-K
		ZD501	0DZ270009CA	MTZ27C TP ROHM-KOREA
		ZD505	0DZ750009DA	MTZ7.5B TP ROHM-K
		ZD506	0DZ560009CA	MTZ5.6B TP ROHM-K
		ZD507	0DZ560009CA	MTZ5.6B TP ROHM-K
		ZD601	0DZ160009BA	MTZ16B TP ROHM-K
		ZD602	0DZ160009BA	MTZ16B TP ROHM-K
		ZD603	0DZ160009BA	MTZ16B TP ROHM-K
		ZD604	0DZ160009BA	MTZ16B TP ROHM-K
		ZD605	0DZ160009BA	MTZ16B TP ROHM-K
		ZD606	0DZ160009BA	MTZ16B TP ROHM-K
		ZD901	0DZ120009CA	MTZ12B TP ROHM-K
		ZD902	0DZ120009CA	MTZ12B TP ROHM-K
		ZD903	0DZ120009CA	MTZ12B TP ROHM-K
		ZD904	0DZ120009CA	MTZ12B TP ROHM-K
		ZD905	0DZ120009CA	MTZ12B TP ROHM-K
		ZD906	0DZ120009CA	MTZ12B TP ROHM-K
		ZD907	0DZ120009CA	MTZ12B TP ROHM-K
		ZD908	0DZ120009CA	MTZ12B TP ROHM-K
		ZD909	0DZ120009CA	MTZ12B TP ROHM-K
		ZD910	0DZ120009CA	MTZ12B TP ROHM-K
		ZD911	0DZ150009BC	MTZ15B ROHM-K
		ZD912	0DZ150009BC	MTZ15B ROHM-K
		ZD913	0DZ120009CA	MTZ12B TP ROHM-K
		ZD914	0DZ120009CA	MTZ12B TP ROHM-K
		ZD915	0DZ560009CA	MTZ5.6B TP ROHM-K
		ZD916	0DZ560009CA	MTZ5.6B TP ROHM-K

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		ZD917	0DZ560009CA	MTZ5.6B TP ROHM-K
		ZD918	0DZ560009CA	MTZ5.6B TP ROHM-K
		ZD919	0DZ120009CA	MTZ12B TP ROHM-K
		ZD920	0DZ120009CA	MTZ12B TP ROHM-K
		ZD921	0DZ120009CA	MTZ12B TP ROHM-K
		ZD922	0DZ120009CA	MTZ12B TP ROHM-K
		ZD923	0DZ120009CA	MTZ12B TP ROHM-K
		ZD924	0DZ120009CA	MTZ12B TP ROHM-K
		ZD925	0DZ120009CA	MTZ12B TP ROHM-K
		ZD926	0DZ120009CA	MTZ12B TP ROHM-K
		ZD927	0DZ560009CA	MTZ5.6B TP ROHM-K
		ZD928	0DZ560009CA	MTZ5.6B TP ROHM-K
		ZD929	0DZ560009CA	MTZ5.6B TP ROHM-K
		ZD930	0DZ560009CA	MTZ5.6B TP ROHM-K
		ZD931	0DZ150009BC	MTZ15B ROHM-K
		ZD932	0DZ150009BC	MTZ15B ROHM-K
		ZDP02	0DZ560009CA	MTZ5.6B TP ROHM-K
		ZDP06	0DZ180009CA	MTZ18B TP ROHM-K